

Waterways at war

TOP SECRET



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Introduction

Waterways at War has been a fascinating topic to research and it has taken me all over the UK searching for information. Many of the documents were classified secret and confidential during the war and were never meant to be read by other people. It was quite exciting to be able to read them now and find out what was going on during times of war. I never imagined I would find so much information about waterways having been part of the country's defences and the importance they played in times of war. I have learnt a lot about waterways during war times and I hope you will too.

I can't finish my introduction without thanking a few people for their help in writing this topic pack, collecting information and images. A big WOW thanks to the Learning Links project funding; Linda Barley and Caroline Jones at The Waterways Archives; Sue and Mike Constable and all those at the Stoke Bruerne Canal Museum; Mike Clarke,

Cath Turpin, British Waterways' staff, the London Canal Museum, and the children of Holmes Chapel County Primary School who helped with choosing the information to include and the design of the pack.

Katie Donlon
Education Coordinator
British Waterways

There's some great challenges to complete in this pack!



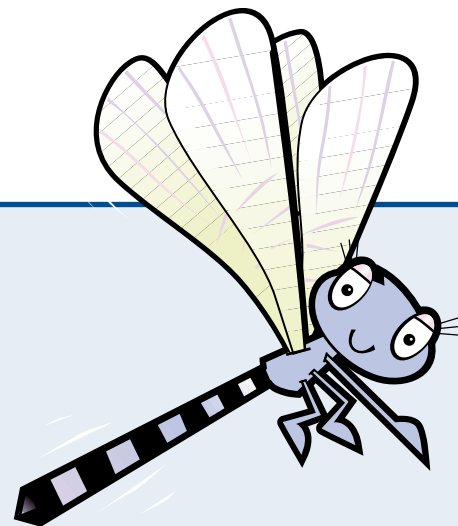
This is an imaginary canal war scene. It helps us to get an idea of what it might have been like for boaters working in urban areas at the time.



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Chapter 1

Military Use



CLASSIFIED

War on the Waterways

Before canals were built, the quickest way to move troops (groups of soldiers) across the country was walking over land. This was very tiring and took a long time to get anywhere. The soldiers could have marched for weeks before they even started fighting! The new manmade waterways provided a new way of moving troops quicker and they were less tired when they got to their destination and so had more energy for fighting.

Most canals in England, Scotland and Wales were not built for military use; canals had a much more peaceful purpose than carrying around troops of soldiers. Most were built by local merchants to move goods around the country.

For example, taking wool to mills and then taking the woollen cloth from the mills to be sold in towns and cities. Although the waterways were not intended for use in war they became a very useful addition to lines of defence and a way of moving goods in war times and became an important part of many wars.

It was often not just the **troops** that were moved by canal but also their families – particularly if they were going to be stationed in a **different place** for a long time. There are documents showing how much it cost in tolls to move soldiers, their **wives** and children.

Strange but True

When **digging** for a new reservoir, in the late 1700s, to feed the Forth & Clyde Canal, **navvies** (the people who did all the digging work) came across **soldiers' bodies** in the ground. There had been a battle there many years before. They even found a soldier **still sat on his horse!**

There are 12 registered battlefields next to canals.

Fascinating Facts

Moving the military

In the late 1790s the British government was very worried about an invasion from France. The French had rebelled against their royal family because they didn't like how the country was being run and eventually after killing the king (and chopping lots of other people's heads off – ew!) they got rid of the royal family and instead the people voted for a ruler. Several years later France declared war on England. Although there were no battles in England, the government did have to prepare in case they were invaded, this meant troops and goods had to be moved around.

There was also trouble in Ireland and the government decided to send troops (about 8000 men!) from London to help. The men were sent by canal boat to Liverpool where they could get on ships and cross the Irish Sea. Someone didn't do their maths right,



Royal wagon train at work on the Royal Military Canal c.1809 Alan Langford

because they didn't have enough boats to fit in all the men and luggage and had to get more boats.

After all that effort to move the men, they only stayed a few boring months before returning to London as no fighting actually took place.

The Mutiny Act (1799) allowed the government to use boats belonging to other people to move troops should there be an emergency and a need to move soldiers quickly. The canal companies were not very pleased about their canals being used to carry soldiers as it meant fewer boats for carrying the cargo that would earn them their money.

Boats were often pulled using only one horse. Here they are using several horses so they could travel faster with the horses getting less tired.

Fascinating Facts

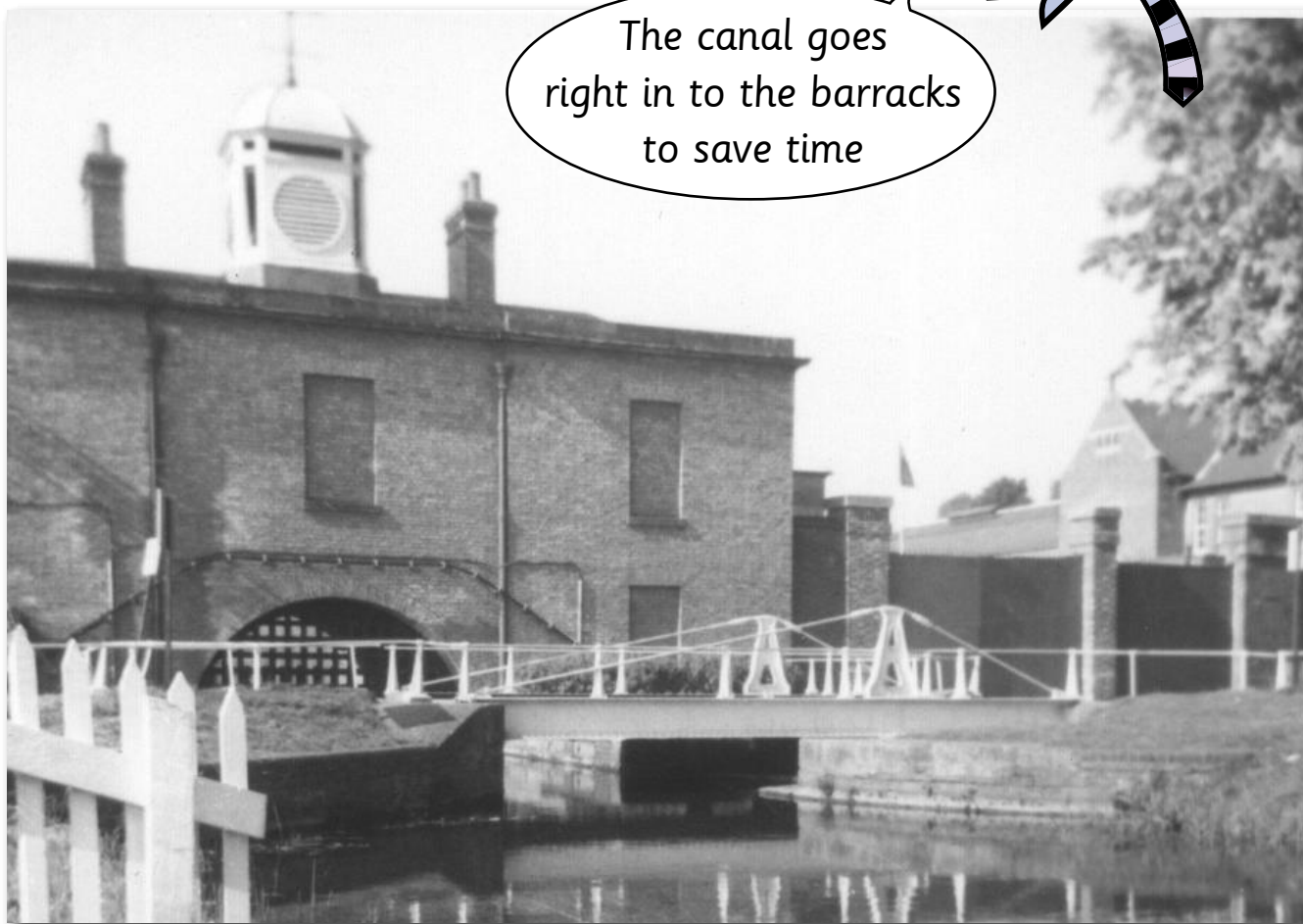
A canal called the **Royal Military Canal** was built near the south east coast during the Napoleonic Wars (the war with France). If French soldiers managed to land on the English coast the canal provided an extra line of defence. It was **difficult to cross** and manned by soldiers who could slow down or even stop the French getting further into the country. Barracks were built to house the troops so they were near by and would be **ready** to move **quickly** if there was an **attack**.

Weedon Barracks

Weedon in Northamptonshire, like the barracks set up on the south east coast, was also thought to be a good place to combine a canal and barracks. It was in a central location near both the Grand Junction Canal and Watling Street which meant weapons and soldiers could be quickly moved all over the country from here. Huge amounts of weapons and ammunition were stored at Weedon ready to be sent to where ever they were needed should there be an attack.

The canal was built right into the barracks so that no time would be lost moving weapons and soldiers to the water. The barracks were very big and so having the canal running through the middle of them also meant that things could be moved around between buildings using boats.

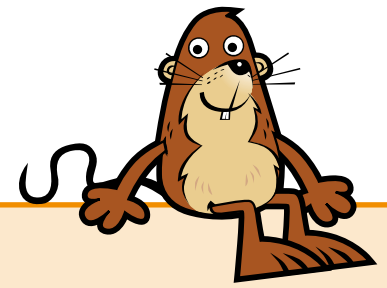
At Weedon Barracks there was housing for the soldiers, a hospital, warehouses for storing supplies and ammunition and even a prison.



Weedon Barracks were opened in 1803 and was used by army up until 1965. The barracks are still used for storage today.

Chapter 2

WW1



World War 1 (WW1) took place between 1914 and 1918. WW1 started in mainland Europe and Britain is an island and harder to attack. So the fighting never reached Britain and thousands of British men went abroad to fight to protect their country.



TW Millner a Grand Junction engineer in home guard uniform during WW1

1914

- Jul 28 – Austria-Hungary declares war on Serbia
- Aug 1 – Germany declares war on Russia
- Aug 3 – Germany declares war on France
- Aug 3 – Germany invades Belgium
- Aug 3 – Great Britain declares war on Germany

1915

- Feb 18 – Germany attempts to stop supplies and troops going in and out of Britain
- Apr 22 – Germany first uses chloride poisonous gas
- May 7 – German submarine sinks the British ship Lusitania

1916

- Jan 9 – British troops withdraw from Gallipoli
- Apr 29 – 10,000 British troops surrender to the Turks
- Jul 1 – Nov 18 – Battles of the Somme
- Sep 15 – British Army first used tanks

1917

- Feb 1 – Germany first uses submarine warfare
- Apr 6 – The USA declares war on Germany
- Dec 15 – Russia signs peace agreement with Germany

1918

- Mar 21 – Jun 15 – Germany and Austria-Hungary fight the last great offensive
- Sep 26 – Allies begin their last attack on the western front
- Sep 29 – Bulgaria signs a peace agreement
- Oct 30 – The Ottoman Empire signs a peace agreement
- Nov 3 – Austria-Hungary signs a peace agreement
- Nov 11 – Germany signs a peace agreement
- Nov 11 – Fighting finally ends



Off to fight

Many men who worked on the waterways volunteered to go off and fight for their country and king very early on in the war. It was only after they had gone that the government realised they still needed men to transport goods around the country – who was going to work the boats now? There were also fewer men to look after the waterways and some canals fell into disrepair.

The 1916 Military Service Act ensured some jobs were listed as reserved occupations – meaning that these jobs were important to the war effort even though they weren't directly fighting the enemy. Working in a dock, port, wharf or on a waterway were all jobs that were really important.



Fascinating Facts

Although the **fighting** took place abroad, the waterways still had their use in **wartime**. Of the 5439 boats that used the Caledonian Canal from April 1918 to April 1919, **3715** of them were on **government business**.

Proof!

A letter in 1917 to the Minister of Munitions from a group of canal companies with a heading 'Better Utilisation of Canals' encouraged the use of inland waterways but asked for a badge so that people knew which workers were required to stay in Britain.



Why do you think these jobs were considered important?

Some people thought men were cowards if they weren't fighting. To prove they were doing an essential job they were given this certificate.



Volunteering to fight abroad

Many waterways workers volunteered to fight. Harry Parker was an errand boy at the docks on the Aire & Calder Navigation, where 2 of his brothers and his father also worked, before the war. He went off to fight in Italy but sadly died in 1917 aged just 23. Unfortunately Harry was not the only one, many men died overseas and so never came back to the waterways. However some were luckier and did return; of the 286 men who volunteered from the Aire & Calder Navigation 250 survived and many came back to work on the waterways.

Thousands of men went to fight in France and some ended up working or travelling by French canal. Their experience of waterways in Britain would have helped.



Credit: www.scran.co.uk

“There was an old soldier came over from the war and they had a shilling for every recruit they could get to list. I remember him getting about 5 of them cos I went with my brother and they went to the listing office and there was only my brother who got through this but the old soldier he was clever, he says ‘now don’t you tell them that you work for the Shropshire Union Railway Canal Co. else you won’t get in the army!’”

(Len Wilson, memories of working on the waterways and his brother going off to fight in WW1)

Although death was something the soldiers faced everyday they sometimes found time to escape from their terror. These Scottish soldiers are curling (a Scottish game played on ice) on a canal in France.

POW (Prisoners of War)

During war, prisoners are often taken by both sides; the people captured by the enemy are usually part of the armed forces. In the Ellesmere Port Advertiser one such case was reported. The Wednesday September 18th 1918 article tells of Private Charles Grimes, who previously lived and worked at Ellesmere Port docks, and his capture. The first worrying letter Charles' family received read:

“I beg to inform you that a party, of which your son was a member, got surrounded in a wood, and it is as certain as anything can be in a war that he was made a prisoner.”

Britain also took prisoners and some of them were put to work on the waterways.



-  **How do you think you would feel if you were taken prisoner?**
-  **Why do you think he would let them know 'all' when he got home?**
-  **What would you write in a letter to your family to let them know you were ok?**

Later the family heard from their son by letter. They must have been very reassured to know he was still alive.

“I am glad to say that I am doing better now and quite happy with my pals, and having a nice time. Will let you know all when I come home. I received a parcel from the Red Cross, about 18 shillings worth in it, and I am entitled to six of these a month, you are only allowed to send me one every three months. Send me some soap, a safety razor and blades. I have only had one shave since being captured. I went to my haversack this morning and found my razor and blades gone. I have had two lots of biscuits, and will draw another lot tomorrow.”

The Waterways Archives Gloucester

Shropshire Union Canal.
Prisoner of War Babour.

Will you please note that as and from the 5th instant the allocation of German Prisoners of War from No.71 Camp, Sherrifhales, to the canal will be 10. This is on account of a repatriation scheme which is taking place at the rate of 15,000 per month, and it will be necessary, therefore, to re-allocate your men on the work accordingly.

I suggest that the two men employed on the length are withdrawn, and put on to the dredging craft. When this number is further reduced it may be necessary to abandon dredging operations with this class of labour.

for P. Everitt,

Canal Control Committee

After the first 2½ years of WW1, the government took control of many of the canals and river navigations under the name of the Canal Control Committee; as it hoped to run them more efficiently. The canal companies were paid compensation (money to replace the money they would have earned if they had been in control).

The Canal Control Committee found that some canals were struggling. There were only just enough men to maintain them before the war, with many men off fighting abroad some were falling into disrepair.

Staff

Some workers got extra pay during the war; they received a 'war bonus' for carrying out vital work but canal companies could not afford to pay this. People could get a lot more money working in factories.

Fascinating Facts

In **1871** the government passed an **Act** which allowed them to take **control** of the railways during any war but they **forgot** about the waterways until after the **war** had started.

2 Millbank House,
Westminster. S. W.
9th January, 1917.

Sir,

BETTER UTILISATION OF CANALS.

On the invitation of the Director of Munitions Railway Transport Representatives of various Canal Companies and Canal Carriers attended a meeting with him to consider whether it is possible to utilise the Canals of this Country to a greater extent than at present for the conveyance of materials of a non-urgent character in order to relieve the pressure upon the Railways and at that Meeting a Committee representing the Canal Companies and Canal Carriers undermentioned was appointed to obtain information and report to the Ministry of Munitions.

The Committee so appointed, have since consulted together and beg to submit herewith general information respecting the working by the various undertaking which they consider should be placed before the Ministry of Munitions, together with suggestions as to the best means which in their opinion are most likely to secure the Canals and Inland Waterways of the Country being more fully made use of than hitherto during the War.

It was a big decision to take on the running of the inland waterways during the war and they had to do research first to check it was worth it.

Transport Workers Battalion

With many men fighting abroad there was a shortage of people to work on the waterways in Britain. The Canal Control Committee arranged for the military to provide men to help work and maintain the canal system. Many of the soldiers weren't used to working on the canals and so trained with existing boat men before going to work on their own boats.

MEN AVAILABLE FOR CANAL COMPANIES FROM THE TRANSPORT WORKERS BATTALION. 29th AUGUST, 1917.			
Grade.	Number available	Rochdale Canal Co will take.	Number of Men available for other Canal Companies.
BOATMEN.	18.	14.	4. <i>for Blawith</i>
HORSE DRIVERS.	17.	11.	6. <i>2 for Mr Hunt</i>
PORTERS.	36.	3.	33.
CARTERS.	10.	Nil.	10.
MECHANICS.	1.	1.	Nil.
DREDGER MEN.	4.	Nil.	4.
TOTALS.	86.	29.	57.

Documents from the Leeds & Liverpool
Canal Records held at
British Waterways, Leeds Office

(g) TRANSPORT WORKERS' BATTALION. - By invitation of the Chairman, Captain Beaumont, the Officer in charge of the Canal section of the Battalion in Yorkshire and Lancashire, attended the Sub-Committee, and the whole question of the training of these men for Canal work was fully discussed.

The Rochdale Canal Co. have about 30 men from this Battalion in their employment, and are training them to act as boatmen and horsedriers in the following manner :-

Usually there are 2 boatmen and one horsedriver to each boat, but in addition, for the purpose of training, one soldier is placed on the boat in addition to the two experienced men, and one soldier is attached to the experienced horsedriver, making 5 men in all in place of 3. This system is working very well, and the men are taking up their duties in a satisfactory manner. Some of them will very shortly be available to take the place of the other boatmen and horse-drivers, and so bring further soldiers into training.

The Rochdale Canal is perhaps the most difficult Canal to work upon in the Northern Area by reason of its many locks and their close proximity to each other, whilst the men have also to go out into the Mersey Tideway and so they become trained in both difficult Canal and Tidal River work.

The benefits of bringing soldiers to work on the canals was not seen straight away as they needed to be trained, which slowed down existing boatmen and cost money.

The Rochdale Canal Company was in desperate need for extra boaters to move their boats and cargo. This document shows that the Transport Workers Battalion did not just provide boatmen but also people to take on other jobs around the canal.

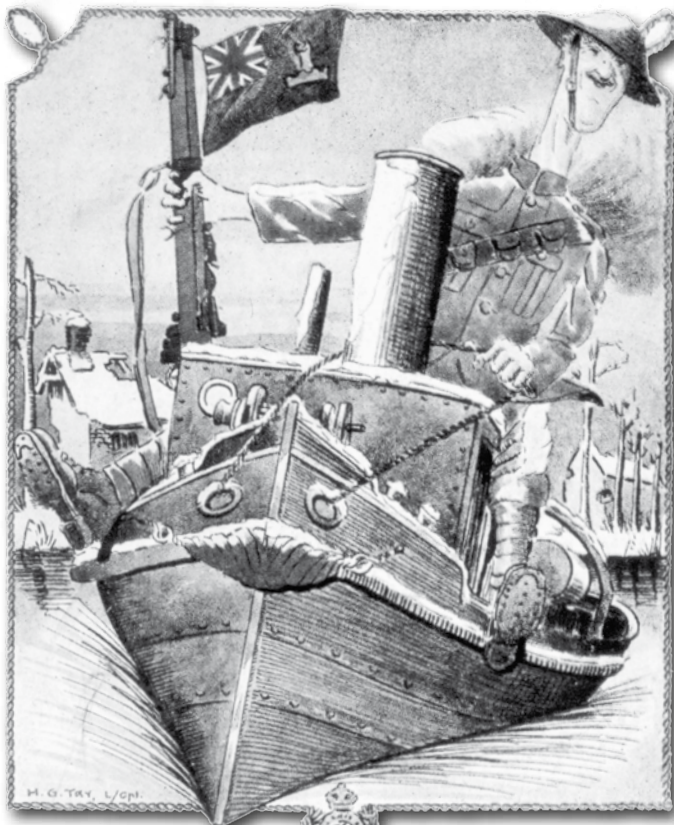
Royal Engineers

The Royal Engineers was set up in the 1700s to provide engineering support to the military. The Inland Waterway Transport Service section of the Royal Engineers was set up in 1915 to provide an expert unit on the building and running of inland waterways. During WW1 they worked on waterways in France and other countries in Europe.

The Royal Engineers still exists today.



The Waterways Archive Ellesmere Port



In order to keep spirit in the dark times of war Christmas cards were produced for the different departments and sections. It gives a misleadingly cheery image of fighting on the waterways.

Herbert Potts

Herbert Potts worked on the Trent & Mersey Canal before joining the army in 1915. He wanted to be in the Royal Engineers.

Dear Sir,

I have much pleasure in stating that Herbert Potts served an apprenticeship as a canal boat builder at our Stoke Canal Dock from January 1907... until his enlistment in May 1915.

He also has some experience in construction and repairing of lock gates, paddles etc and is a steady and reliable workman.

As I understand he is desirous of a transfer to the Canals, Docks and Harbours Branch of the service I consider he would be a very useful man for the work.

Yours Truly

H. Curbishley

(Letter to the Royal Engineers, dated 22nd September 1917)

After WW1

After the war ended, the waterways were handed back to the canal companies – but some were not so enthusiastic about getting them back! The companies realised that there was less need for canals outside of war times, with cargo being carried by lorry or train and the canals still cost a lot to keep running. The government didn't want to keep running them for the canal companies because it had been so much work and money during the war.

Despite the government not wanting to run the canals after the war, canal companies and individuals continued to try and convince the government that they should run them. Mr R. B. Dunwoody from the Institute of Civil Engineers gave several lectures on the waterways after the war, always making sure he talked about the government running them.

“Moreover there is, I think a moral obligation on the government to assist the canal companies and keep open the waterways. That obligation arises from the fact that, during the first two years of the war, no assistance, either financial or in any other direction, was given to the Canal Companies; while the railway companies were supported from the day the war broke out.”

After the war all the soldiers and recruits that had been brought to work on the waterways went back to what they were doing before the war leaving the waterways without enough people to maintain them. Even the people that did consider staying couldn't as there was no money to pay them.



WAR DEPARTMENT

Chapter 3 WW2

World War 2 (WW2) started in 1939 and ended in 1945. The war started in Europe when Germany declared war on other countries and then it spread to the rest of the world. Germany and its allies (countries that were friendly with Germany) were trying to take over other countries. Hitler the leader in Germany at the time and his followers (Nazis) also believed that some people were better than others and this caused them to kill a lot of people such as Jews.

Britain tried to help other countries by sending troops abroad to fight against Germany and its allies. Germany declared war on Britain and unlike WW1 where all the fighting was abroad, the enemy tried to invade Britain. Many bombs were dropped on Britain destroying homes and making life very difficult. The enemy also tried to stop supplies (like food grown in other countries) getting to Britain on boats by blocking their way and even sinking them.

1933

- Jul 14 - Nazis become the only political party allowed in Germany

1935

- Mar 16 - things begin to go wrong when Hitler breaks the peace agreement made at the end of WW1

1939

- Jan 30 - Hitler threatens the Jews in a speech
- Mar 15/16 - Nazis take Czechoslovakia
- May 22 - Nazis sign a pact with Italy
- Aug 23 - Nazis sign a pact with Soviets
- Aug 25 - Britain and Poland sign an agreement to help each other
- Aug 31 - Evacuation from London begins and troops begin to get ready for war
- Sep 1 - Nazis attack Poland
- Sep 3 - Britain, France, Australia and New Zealand declare war on Germany
- Sep 10 - Canada declares war on Germany; Battle of the Atlantic begins

1940

- Jan 8 - Rationing begins in Britain
- Apr 9 - Nazis invade Denmark and Norway
- May 10 - Nazis invade France, Belgium, Luxembourg and the Netherlands; Winston Churchill becomes British Prime Minister
- Jun 10 - Italy declares war on Britain and France
- Jul 10 - Battle of Britain begins
- Aug 23/24 - First bomb raids on London

1942

- Jan 26 - First American soldiers arrive in Britain

1944

- Jun 26 - D-day landings

1945

- May 7 - German forces surrender
- May 8 - V E day (victory in Europe)
- Sep 2 - V J day (victory in Japan)
- Oct 24 - United Nations formed



Ministry of War Transport

When WW2 started the government realised they would need a strong transport system around the country and so took over the waterways (again!) to make sure they were run in the best possible way to help the war. Individual canal companies could not afford to keep the canals maintained and needed the government's help to ensure they were repaired and running efficiently.

The Manchester Ship Canal was **important** during WW2 and was kept open during the **entire war** despite lots of air raids targeting the docks and factories around the canal. **Tanks**, aircraft and other war supplies were made in factories around Trafford Park and then **transported by boat** to where they were needed.

Secret and confidential

It is obvious from this summary picture of the canal position that consolidation is necessary. It has been recommended by all those who have now been appointed to investigate the position and is just as urgent and necessary now. In fact to secure efficient maintenance and dredging, to provide adequate technical and engineering services to save the general overhead expenses in war it is more urgent and necessary.

(Pick Report, written at the beginning of WW2)

Fascinating Facts

The **Caledonian** Canal and the **Crinan** Canal, in Scotland were already owned and run by the **government**.

The Minister of Transport on a narrowboat at Apsley. He was showing the importance of canals as transport during the war.

It was also suggested, in the Pick Report, that canals which cost more to maintain than the value of the traffic on them should close straight away. This included the Kennet & Avon Canal and Stroudwater Canal followed shortly by the Worcester & Birmingham Canal once better road links had been established.



The Waterways Archive

Cargo

During WW2 cargoes carried by boat included all sorts of things that were useful for the war: anti-aircraft shell cases, shells, ammunition, oil, petrol and hand grenades as well as all the usual everyday items such as food, coal and timber.

“They also carried sugar during the war. They referred to it as ‘sand’. It was brown sugar and they carried it from Liverpool... they used to carry food stuff during the war and tinned foods for the army to Chester from ships at Liverpool.”

(Mr J. Klaus, recalling the waterways during war times, 1983)

 **Why do you think they called the sugar ‘sand’?**

Dangerous cargo

Chemicals, petrol and other dangerous or flammable material had been carried on the waterways for many years before the war. However the war brought it to the attention of people and they were worried about what would happen if the boat set on fire or spilt its contents.

The Manchester Ship Canal Company was especially worried about explosives being loaded and unloaded at Ellesmere Port. It was right next to their canal and if there was an explosion it was likely it would seriously damage the canal.

Gunpowder

The Enfield Gunpowder Factory produced gunpowder for many years, including during WW2. The gunpowder was transported by boat around the factory as well as being taken to other locations. A red stripe was painted around boats to show it was carrying a dangerous cargo.

 **What do you think this boat is carrying?**



The Waterways Archive

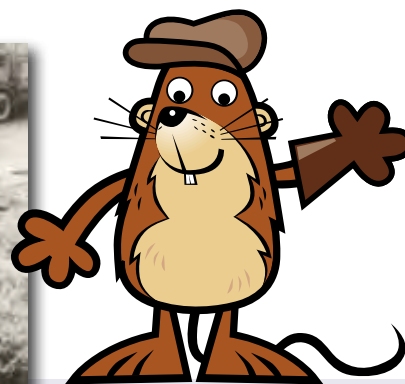
Carrying cargo in wartime

During the war when every stranger was a suspect, we taught boatmen they must report anything which might be regarded with suspicion. They were not to talk about their trips, where they loaded cargo, or destination... it was all carefully clothed up – under laced tarpaulins; and not visible to lookers-on.

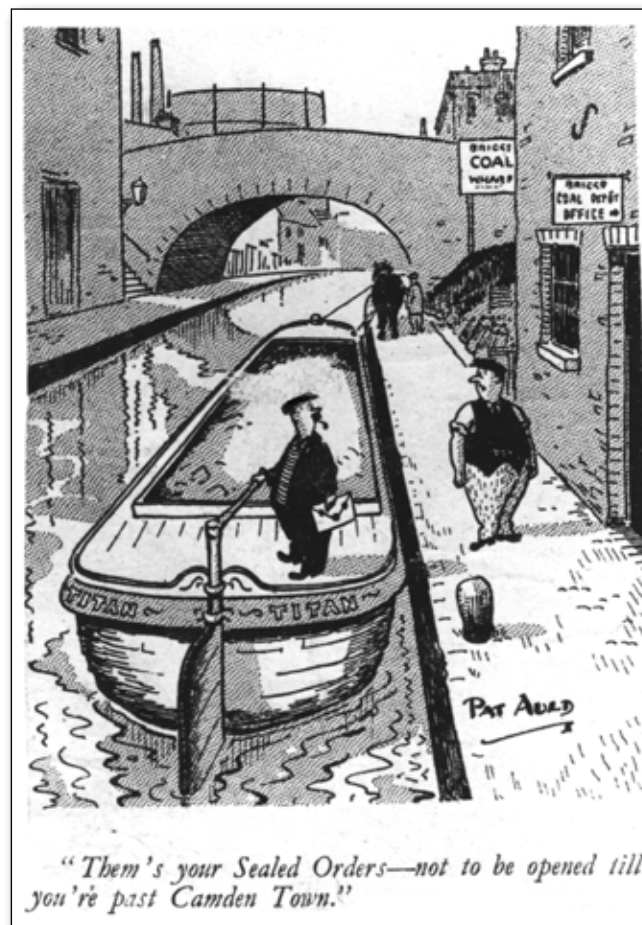
(Written by the Ministry of War Transport, after the war)

Strange but True

One of the **chairmen** of the Ministry of War Transport (a very important man) asked a **boatman** what he was carrying in his boat, the boatman replied “**toffee apples** to you, you old so and so” not realising who he was talking to. The chairman was really **pleased** the boatman was doing his job properly in keeping his cargo **secret** so gave him some money for a drink!



A boatman's job was an important one as they could be carrying secret cargoes. To protect their cargoes from spies the cargo was often covered.

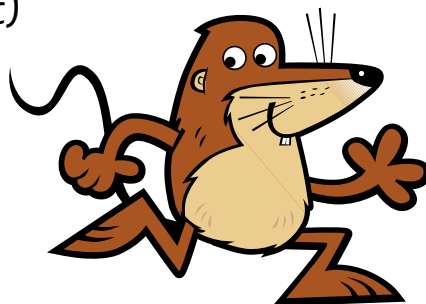


Humour was a good way to make people remember important messages and was important in times when spirits were low.

Would you be able to keep important secrets?

The Home Front

People use the term the 'Home Front' to describe how people who were not in the military (and were still in Britain) helped the war effort. The canals and rivers were an important part of the Home Front, as they were a way of moving things around the country. There weren't enough trains to carry everything and petrol was rationed (there wasn't very much of it so it had to be used carefully and shared out) for vans and lorries so over 12,000,000 tons of essential cargo was carried on the waterways each year.



It was important to be prepared. This was taken during a fire drill on the Aire & Calder Navigation. Gas masks were worn in case any 'dirty bombs' filled with poisonous gas were dropped.



People remaining in Britain had to do their bit and this could find them doing jobs they had not considered before. Women also had to do their bit towards the war effort.

The Waterways Archives

Strange but True

The **war** did not stop people having **fun**. Philip Millard wrote (The Motor Boat and Yachting, December 1944) of his **holiday** on his boat Luana along the River Weaver in 1944 saying he **couldn't wait** for sailing restrictions to lift!



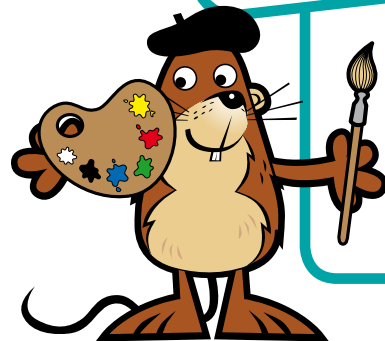
The Waterways Archives

Air raids

In 1940 the enemy began to send planes over Britain to drop bombs. Between July and December 1940, 23,000 civilians (people not in the armed forces) were killed in the bombing. The Germans wished not only to destroy factories making war supplies but also to frighten people and destroy confidence.



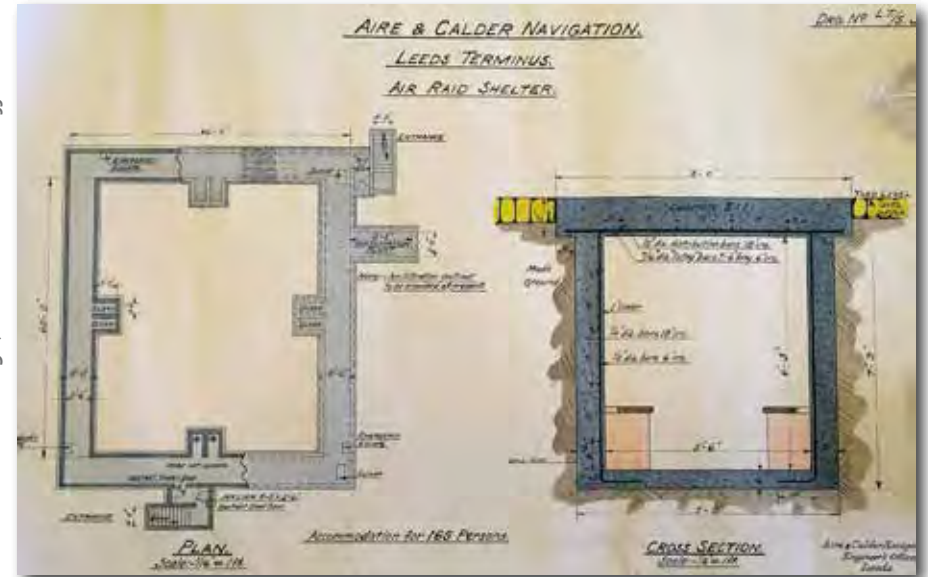
People were told to prepare for bombs long before any actually dropped. This is an advert for an air raid shelter. Everyone was also given a gas mask in case any of the bombs held poisonous gas.



Challenge

Why not have a go at making your own model air raid shelter?

British Waterways, Leeds Records Office



Public air raid shelters were constructed for when people were not at home. This one on Dock Street held 165 but some held thousands of people!

ARP (Air Raid Precautions)

Cities were targets for bombs. A siren was sounded to warn people of bomber planes coming and then they rushed to the nearest shelter. Many air raid shelters around the country still remain, including one at Ellesmere Port Docks. Many children were sent to the countryside where it was safer.

It must have been really scary to hear the sirens go off and then the hum of planes going overhead.

Boats and boaters in air raids

Boaters did not often have access to air raid shelters. They could be moored up where there were few public shelters or even on the move when the sirens went off. They could frequently do little else than sit in their boats and listen to the planes overhead and hope they were not in an area about to be bombed – this must have been really scary.

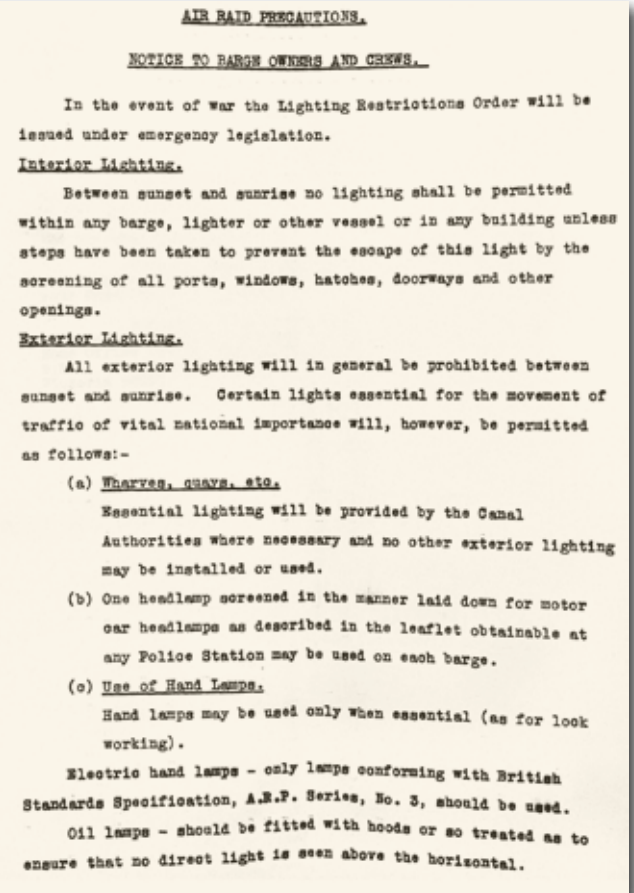
“One of the boats was actually lost in the very big raid... I cannot remember the name now, but she was in dock in Liverpool in Huskinson's. She should never have been there, she was supposed to be out in the river, but for some reason she was brought into the dock and there was a blitz in Liverpool and I think it was the Saturday night this ship was hit. With it being loaded with ammunition it completely wrecked the dock... it was absolutely shattered.”

(Mr J. Klaus, November 1983)

“There were nights when the rumble of planes overhead and the nearby barking of the ack-ack guns made us feel horrible in our small boats, so that we were glad to be loaded and off again to the comparative safety of the countryside.”

(Cornish, M. *Troubled Waters: Memoirs of a Canal Boatwoman*. Roberta Hale, 1987)

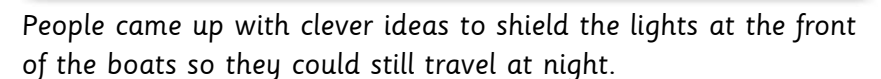
We have to carry gas masks all the time and put them on like this if a bomb containing poison is dropped.



There were a lot of rules and instructions written for people during wartime to help keep everybody safe.

On some canals, stop planks were put in place at night which meant if a bomb was dropped they acted as a dam to stop the water running out of the canal and causing damage.

Strange but True



ARP Wardens

Volunteers were recruited to join the ARP Corps (Air Raid Precautions) to be on fire duty and enforce blackout rules. They had to watch for fires and help put them out – there were lots of fires during the bombing. They also had to know about different gases that might be dropped and what advice they should give people.

“As time went on, it became compulsory for everyone to do fight-watching duty on one night per week. A hut on the slip-way was cleaned and painted and fitted with camp beds and facilities for making tea etc and each night 4 men would spend the night there. Fire fighting equipment consisting of stirrup-pumps, tin hats, axes and ropes were supplied in case of a bomb attack.”

(R.Jones, Chronicles of the Shropshire Union Docks, The Waterways Archives)

“After the terrible bombings of 1940/41, as home guards we used to go down on Bowaters trucks to Liverpool Docks to salvage fire service equipment ruined by trapped horses, fire engines, we had one in which a warehouse girder came down right across the fire engine.”

(Frank Southern, remembering the docks around Liverpool during the war, 1983, The Waterways Archives)



Fire

Fire was a great risk with bombs falling. The enemy targeted warehouses, factories and docks to destroy supplies and prevent import and exports.

“The Local Authorities have generally made arrangements either for fire boats to operate on the canal or for hydrants to be fixed adjacent to the waterways and terms have been arranged to cover these items also.”

(WW2 letter concerning the Birmingham Canal Navigations)

Fireboats

Some fireboats already existed before the breakout of war as warehouses full of dry goods often caught fire. However with an increased need for a way to put out fires in docks the Ministry of Transport obtained additional boats which could be used as fireboats. Fireboats were used in several areas around the country (mainly big cities and docks targeted by bombers) including Liverpool, Birmingham and London.

This list shows some of the boats operating as fireboats and where they were working. One boat has a particularly appropriate name can you spot it?

Strange but True

Fireboats weren't the only ones bought by the Ministry. They also bought iceboats or **adapted** existing boats to be iceboats by chopping off the front to shorten the boat, **reinforcing** it with metal and adding a blade to the front. Ice boats **broke up** the ice so that other boats weren't held up and could continue **delivering** cargo through the winter.

Fire Force Area	Locality	Name of Vessel	N.F.S. Serial No.	Type of Vessel	Pumping Capacity	G.P.M.	Propulsion	How obtained and when	When first Commissioned.
34	Regents Canal, Harrow Road.	Asterope	236	Canal Barge	3 large	1500	18 h.p. Diesel	M.O.W.T. Feb. 1941.	14.3.41.
34	Grand Union Canal, Hayes.	Scorpio	238	Canal Barge	3 "	1500	Diesel	M.O.W.T.	4.1.43.
34	Grand Union Canal, Paddington Basin.	Radiant	235	Canal Barge	3 H	2100	18 h.p. Diesel	M.O.W.T. Oct. 1941.	27.10.41.
34	Grand Union Canal, Greenford.	Sculptor	239	Canal Barge	3 H	2100	Diesel	M.O.W.T.	5.10.43.
34	Grand Union Canal, Brentford.	Fireworks	237	Fireboat	1 H	700	Thornycroft H'Billy 9 h.p.	Purchased for Barnes F.B.	Oct. 1939.

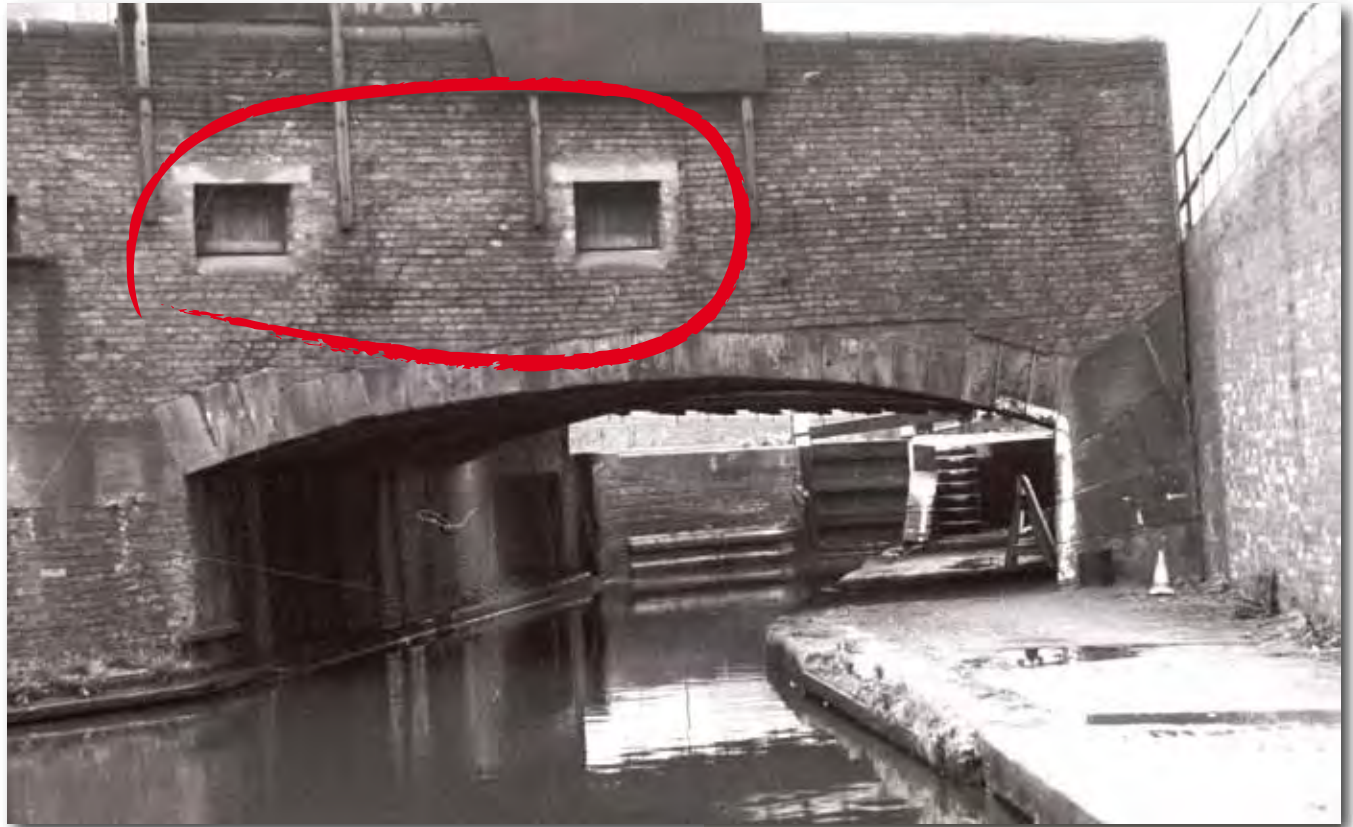
Massey Shaw

One fire boat working around London was called Massey Shaw. The boat was built in 1835 and was named after the first chief officer of the Metropolitan Fire Brigade. The boat continued to work as a fireboat into the 1970s.

Strange but True

Massey Shaw went to Dunkirk where an important mission took place to **rescue troops**. The boat was used to ferry soldiers from the **shallow waters** around the beach to the bigger vessels which would **return them** to England. During this unusual task, the **flag** from Massey Shaw was used to bandage an **injured soldier's arm**.

Find out more about fire-boats at www.london-fire.gov.uk



The fire doors have to be opened using a key.

Fascinating Facts

Waterways were a **valuable source** of water for fire fighting. Doors were built in **bridges** so that pumps from **fire engines** could easily reach the **water**. The fire service can still use water from canals today in an **emergency** and have keys to **unlock the bridge doors** where they still exist.

Photograph: Mike Constable

Damage

 **What happened if the canal got hit?**

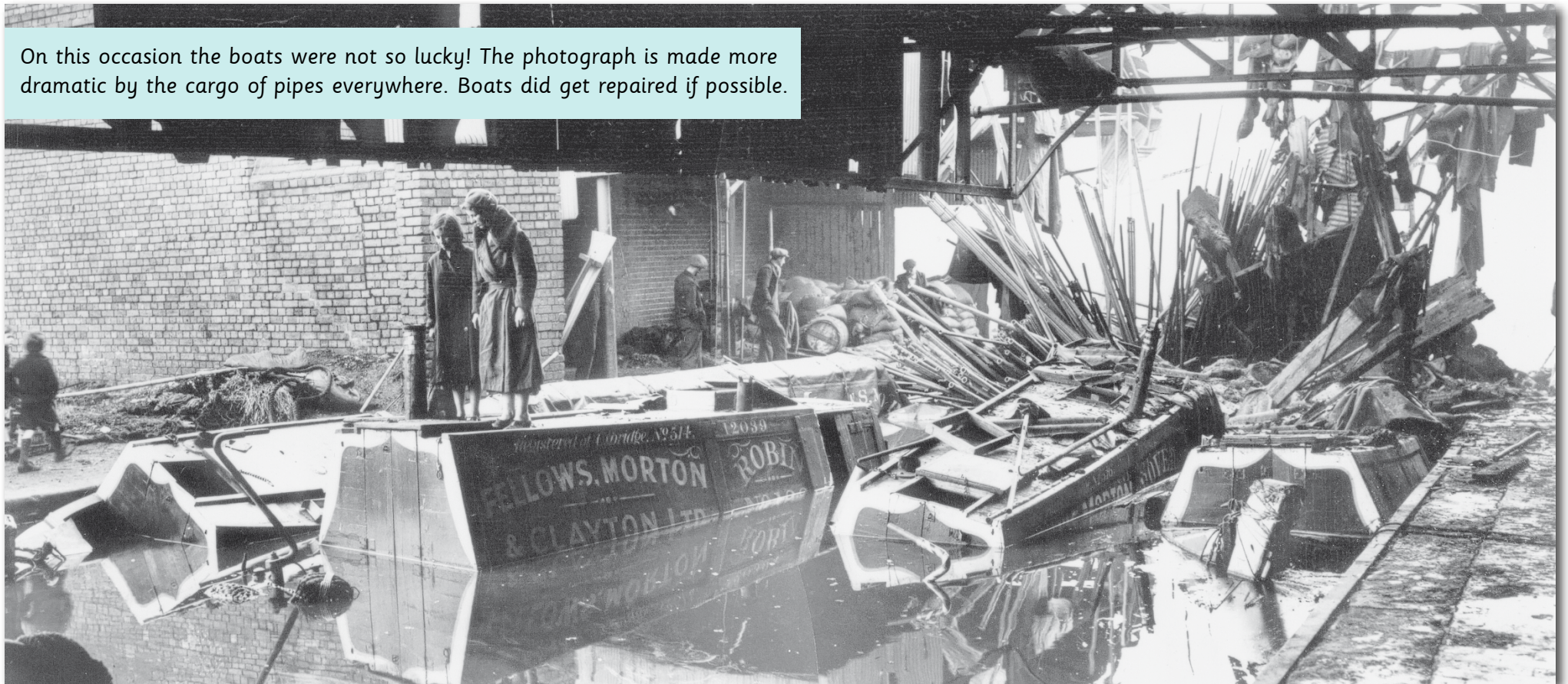
Canals, bridges and tunnels had to be repaired quickly to keep the canals open so that cargo could go on being carried.

Repair works were completed in record time as people realised how important it was to keep the boats moving. You can still see blast damage on the Granville Road Aqueduct in Birmingham.

 **Did any boats get hit by bombs?**

Not many boats got hit by bombs but it was not unheard of. Boats were most at risk when passing through cities as these areas were targeted by bombers.

On this occasion the boats were not so lucky! The photograph is made more dramatic by the cargo of pipes everywhere. Boats did get repaired if possible.



War Damage Act

Damage to property and businesses was frequent during the war and companies had to be compensated by the government. Countries then try and get compensation from each other after the war to make up for the damages done. This was good for companies if they couldn't afford to pay for damages themselves but it seems the Act and the claiming process was not straight forward.

“I am prepared to admit that I may have made a mistake entering £821.16 instead of 12 pounds 7 Shillings and 6 pence in the form I recently returned to you, because the interpretation of the War Damage Act is quite beyond me.

I have looked into the matter again, but feel like I am none the wiser, so, unless you feel like exploring the 1943 Act and advising me the exact position I suggest you send them my apologies for the error and ask them to amend the figure.”

(Letter from the Severn Navigation to the War Damage Canal Group)



Canal Companies were normally responsible for their canals and the repair and maintenance but during the war the government took over and would have been responsible for repairing damage done.

London in WW2

On 7th September 1940 (this became known as 'Black Saturday') the Blitz on London began. Although preparations had been made no one could have predicted how bad the bombing would get – London was bombed for 57 nights in a row.

Hitler planned to wear the people of Britain down so that the government would surrender. London must have been a very frightening place to live during the Blitz; many children were taken outside the city (evacuated).

Fascinating Facts

The word '**blitz**' means '**lightning**' in German.

I'm being evacuated, that means I'm going to stay in the countryside where it is safer.



Docklands in WW2

The Docklands area of London was a main target for bombs. The enemy wanted to destroy the warehouses storing goods and remove Britain's way of getting supplies in and out of the country. It was vital to keep the docks working during the war and despite the attacks the people who worked there did the best they could. Thousands of bombs and explosives were dropped over the area.

Fascinating Facts

It took over **10 years** to rebuild the docks after the **war** but it did give the opportunity to **modernise the docks** with lots more mechanical equipment.

The docks also played an important role in preparing for D-Day in June 1944 when there was an important invasion into France. Floating harbours were built in the docks before being towed to Normandy ready for the invasion. Many ships and men gathered here and over 16,000 dockers helped load the ships ready to set sail for France.

Lines of defence

To help prevent the invasion of Britain the government planned lines of defence. These would prevent the enemy army from moving inland from the sea.



How did the waterways help?

The River Thames, Leeds & Liverpool Canal, Bridgewater & Taunton Canal, Oxford Canal and Kennet & Avon Canal were all identified as lines of defence. The waterways acted as barriers that could be defended to stop the enemy crossing the water. Pill boxes (concrete boxes from which the enemy could be shot at) were built along the canal. Pill boxes were disguised in the undergrowth or even painted to camouflage them.

Bridges were protected and tank traps were installed. These were often concrete blocks or poles sticking out of bridges to slow down tanks long enough for soldiers to destroy them.

The Home Guard would have been responsible for manning the defences and fighting the enemy off should they get into the country.

**Strange
but True**

Barges were taken from the canal and **moored** in a reservoir at Blackstone Edge **to stop planes** from landing on the water.

Many pill boxes can still be seen along the canal.
Look out for them next time you are out on the canal.



Photo courtesy of Nigel Crowe

Preparing for attack

Canals had to be protected against bombs. In many places stop planks were put into the water at night or gates (like lock gates) were closed. They worked like a dam blocking the water. This meant that if a bomb fell on the canal all the water would not rush out and flood areas possibly damaging buildings or even killing people.

As time went on, the bombing wasn't so frequent. In some areas they only put the stop planks in when there was a bomb alert. This pleased boaters as when they were put in every evening it meant the boats couldn't work late.

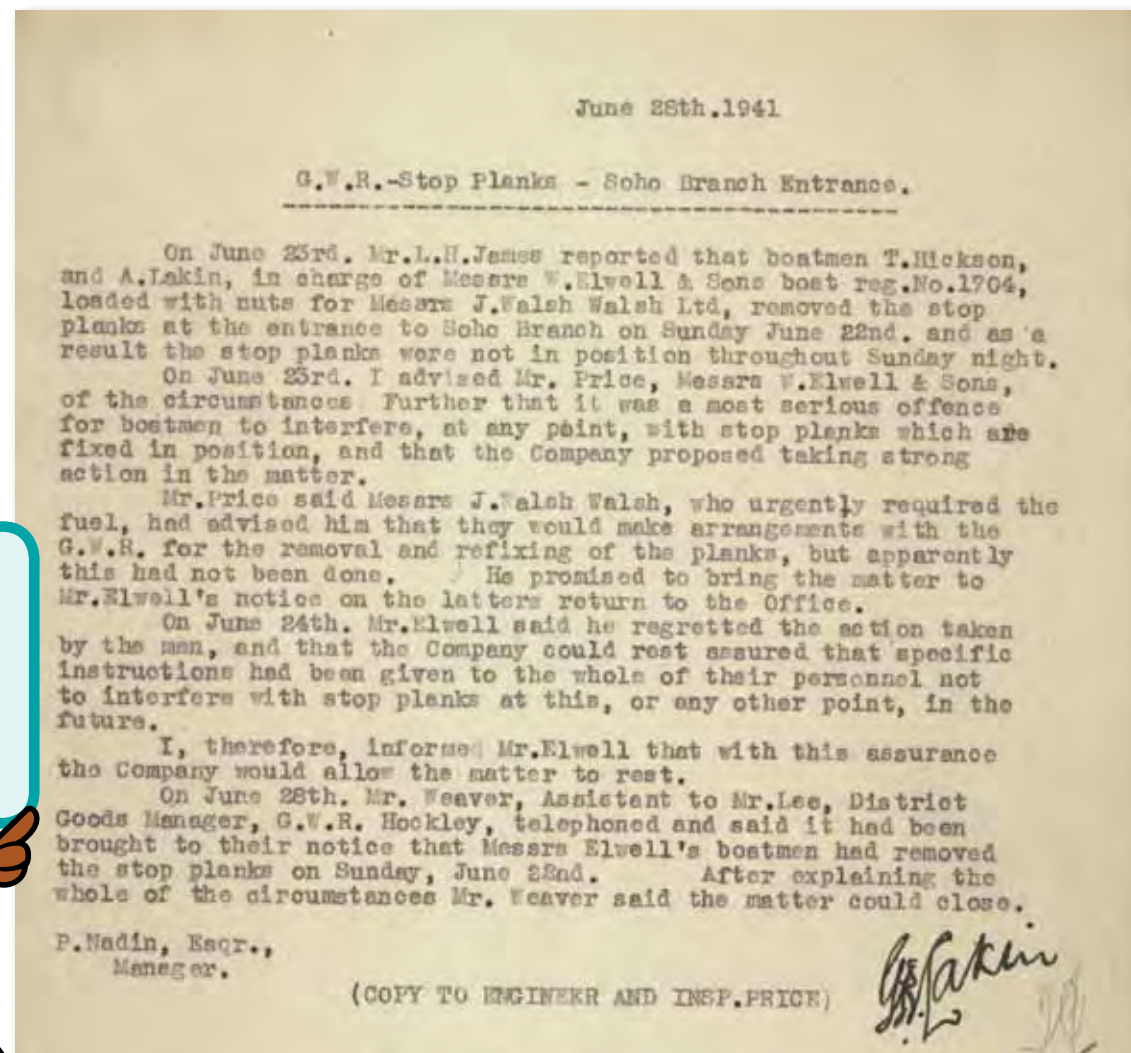
**Strange
but True**

When **canal workers** came in to work in the **morning** they sometimes got a surprise. **Naughty boaters** had been **moving the stop planks** in the night!



Fascinating Facts

A **Lancaster Bomber** went down over Kipton Reservoir. Some people say **parts of the plane** can still be seen **sticking out** of the reservoir when the water level is **low**.



Spies

There were lots of posters giving advice during the war and quite a few were about spies. They warned people that they never knew who might be an enemy spy and you had to be on the lookout. This letter details the capture of a possible spy recording details about the waterways.



CONFIDENTIAL

“Dear Sir

At about 3.45 this afternoon, the attention of Mr M who was engaged painting the chain of the Birmingham Valve, was drawn by a member of the Galaland Ltd's staff, to a youth who was sketching on the reservoir dam.

Mr M called for Mr R as a witness, and together they approached the youth, and on perceiving he was making a sketch of the reservoir, brought him to this office.

I asked him for his identity certificate, and he produced one bearing the name of Mr J M.

The local police were immediately communicated with and a Detective Sergeant and Superintendent came down. They questioned him as to his intentions, when he stated he was studying algebra, trigonometry etc with a view to obtaining a position with the Air Force when he attained the age of 20, next March.

It was noticed during the interview that he had in his possession a small camera, which fact he did not attempt to disguise.

In view of these facts they decided to take him to D Road Police Station for further investigations.”

(The Waterways Archives, Letter dated July 31st 1940, full names and locations not included to protect the identity of our possible spy!)



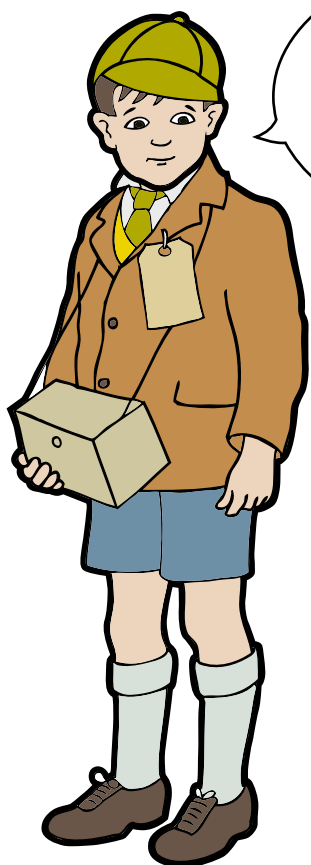
Do you think he really was a spy?



Could he have wanted to blow up the dam or was he just doing his college work?

Navy and army

The waterways were not just for moving around cargo. Naval boats were also using them to move around the country and to cross between seas. In Inverness the Americans set up a base alongside the canal.

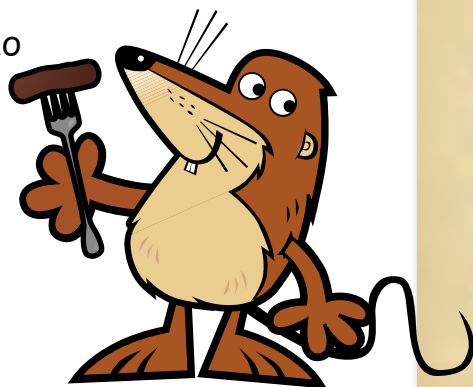


Not everyone was pleased that naval boats were using the canals!

OPY.
T. & J. HODSON.,
Whitebirk,
Blackburn.
October 16th, 1942.
R. Davidson, Esq.
R. Davidson, Esq.
Dear Sir,
With regard to the Naval Craft passing through the Canal, we consider these are passing along far too fast causing water to come over the Canal Bank 12" to 15" deep into our yard.
As our yard lies very low we had a large amount of water lying in our yard and trust that any further craft will proceed at a slower rate.
Yours faithfully,
(Signed) T. & J. Hodson.

Food and rationing

During WW1 many people had been short of food. The men who normally ran farms were away fighting and the enemy made it difficult to bring in food from other countries. To avoid this in WW2 food was rationed.



Rationing

To make it fair the government decided to share out what food there was. They gave everyone a ration book which had coupons which could be exchanged for food to stop rich people buying all the food and the poor going hungry. Everyone was allowed to buy a certain amount of meat, cheese, bread and other essentials. People had to take their books with them when they went to buy food; they still had to pay for their food but also give their tokens in (or have them signed).

Families had to register with their local shop to collect their rations. This meant that the shop could obtain enough food for those registered. Some food was still rationed up until 1954 nearly 10 years after the war had ended.



Boaters

Some workers got extra rations if they were involved in physical work. Unfortunately although boating was hard work and involved long days, arguments were still going on in 1948, after the war ended, as to whether boaters could have extra food. Eventually they got a little extra cheese each week.

Collecting rations was not always easy for boaters as they couldn't always register at one shop because they were on the move. Local shops didn't want to give boaters that just turned up the food instead of their regular customers.

Some shops near the canal were more sympathetic and boaters learnt which places they could get their rations from. Canal companies also set up their own shops where the boaters could collect their food.



Do you think boaters should have had extra rations?

Food Facts

Not everyone had the same colour ration book. Most adults had brown coloured books. Pregnant women and young children had green books which meant they could get the extra food they needed; they could have double the amount of eggs, a pint of milk a day and the first pick of fruit.

Children between the ages of 5 and 16 years had blue books which meant they could have a full ration of meat, half a pint of milk a day and fruit.



This is a ration book. People registered with a local shop where they bought their rations and had to take the book with them.

Fascinating Facts

Before the war **50 million tons** of food was brought into Britain **every month** from other countries. Only a month after the war had started this dropped to **12 million**.

The Germans **stopped** food coming into the country by **blockading and attacking** ships carrying food.

A Ministry of Food questionnaire showed that **622 family boaters** and **194 boatmen** were working on the **waterways** (as well as all the people working on the bank) and would need **extra rations**.

The largest number of boaters that would be able to get the **extra rations** worked for a canal company Fellows, Morton and Clayton.

Strange but True

Vegetarians could swap their **meat coupons** for **other food** coupons.

M & M's (yummy chocolate!) were invented during WW2 in **America** so they could be passed around **soldiers** without them getting their **fingers sticky!**

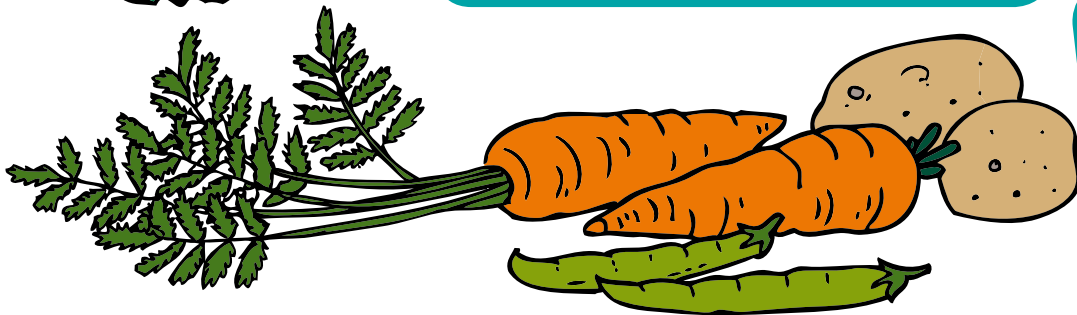
Rationing started in 1940, not long after the **war** had started but didn't end until 1954; **9 years** after the war had ended as it was still **difficult** to get **hold of food** after the war.

Dig for Victory

People were encouraged to grow their own vegetables to add to their diet and ensure they had some fresh food. Of course this wasn't easy for boaters but dock hands, lock keepers and other people with their own home could have vegetable gardens.

Challenge

Dig for Victory and grow your own vegetable garden. If you don't have a garden you can still grow cress and small lettuces in a table top garden.



Over a million British people had a go at growing their own vegetables. They followed the instructions in this rhyme:

Dig! Dig! Dig! And your muscles will grow big

Keep pushing the spade

Don't mind the worms

Just ignore the squirms

When your back aches laugh with glee

And keep on diggin'

Dig! Dig! Dig! To Victory.

Challenge

Growing fresh vegetables is still great today and cheaper than buying them! Why not write your own rhyme to get people out in their gardens today?



Clothes and other rationing

Food was not the only thing that was rationed, clothes were too. This was so that some of the factories that normally made clothes could make other goods essential for the war.

Work clothes

“On visiting the two gangs of dredgers yesterday, H Freeth and mates, and J Taylor and mates, they all complained about their boots wearing out and asked if there was any possible chance of obtaining additional supplementary clothing coupons.”

(The Waterways Archive, letter to a Mr T Price at Icknield Port to the Manager, March 4th 1943)

A later letter stated:

“As explained, there is a definite shortage of materials for clothing in the country and we are informed there is no prospect of extra coupons being issued.”



Men, women and children living and working on boats did not get provided with any extra work clothes and dressed as they had in previous years.

Many other things were in short supply too...

Paint

“We are advised by the M.W.T that there is likely to be a shortage of paint. The Miscellaneous Chemical Control are prepared to give priority facilities to the Canal Industry.”

(The Waterways Archive, Letter about the Birmingham Canal Navigations, January 15th 1943)

 **What do you think they wanted the paint for?**

Petrol

The lack of petrol meant that cars could not be used so often and people were rationed in how much they were allowed. Petrol to move soldiers and supplies had to come first.



Many vehicles – used to delivering everyday items such as envelopes - were used to move war related items.

**Strange
but True**

Even if you **did have the petrol** to go for a drive you would have to be **careful** as all the road signs were taken down to **confuse the enemy** and help them get lost!

Rubber

Useful materials like rubber (for tyres) and metal (for making weapons and ammunition) were in great demand. Workers had to justify needing rubber protective clothing such as wellies for their work. During the war people had to make do with the things that they already had and were good at recycling old clothing, making sure they wrote on both sides of paper and saving bits of string and packaging.

Strange but True

During **WW2** supplies of rubber were **cut off** as countries producing it were invaded. **James Wright**, an American engineer was working on creating an alternative and invented **Silly Putty**. He wasn't sure what to do with it until someone came up with the idea to use it as a **toy**.

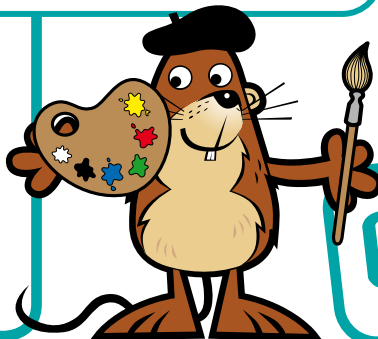
Challenge



Top Tip

Get an adult to help!

Make your own Silly Putty!
All you need is 2 cups of PVA glue,
1 cup of liquid starch and some food
colouring. Mix it all together and you
have your own supply of Silly Putty.



Challenge

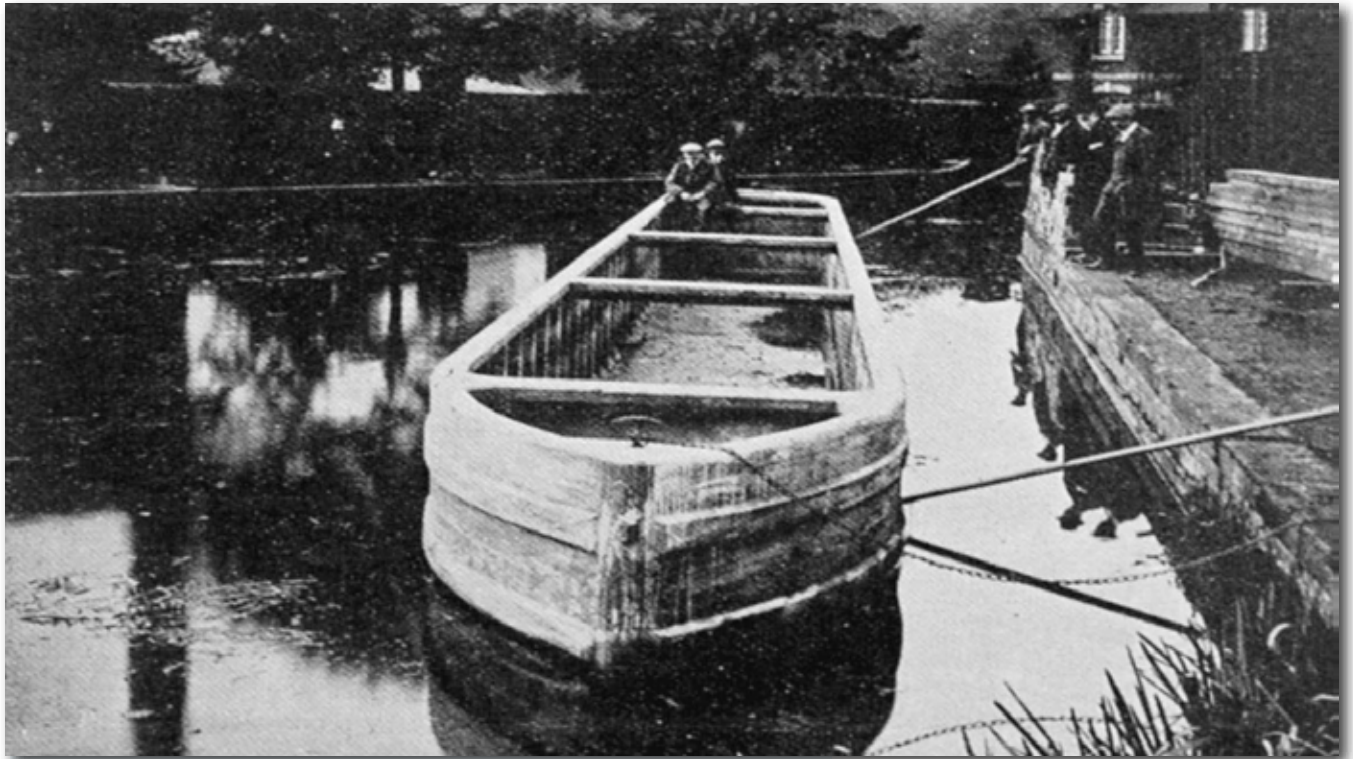
Could you design a pair of wellies that work to keep out water without using rubber?



Concrete boats

With metal in great demand for ammunition during the war, some interesting alternative materials for making boats were tried out. You may be surprised to hear that boats were made out of concrete. Although this might not seem like the most obvious material to use, it was more readily available than the traditional metal and wood and made boats quick to construct.

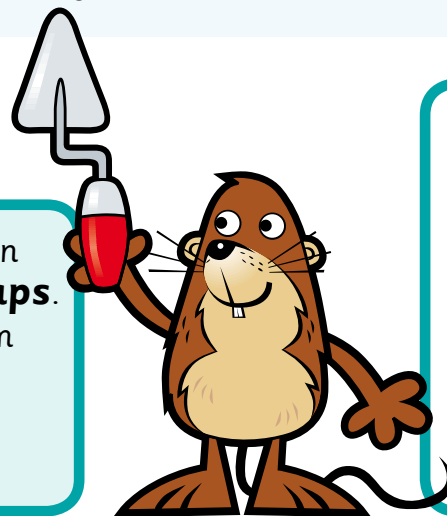
Most of the concrete boats were barges, however there were a handful of concrete narrowboats, but they did not work very well as they were a bit too delicate.



This is a concrete boat in use. You can see a concrete boat at the National Waterways Museum at Ellesmere Port.

**Strange
but True**

Many concrete barges ended up on some very interesting **scrap heaps**. There are concrete boats that form harbour walls and even **flood defences**. You can see them at Purton on the River Severn.



Challenge

Think you know what different materials are used for? Why not bend the rules and have a go at making a well known object out of something different? What other materials could be used to make a boat? Don't forget to try your boat out to check it floats!

Propaganda

Lots of posters were produced during the war to keep up morale and encourage the kind of behaviour that would win the war.

These included posters about joining the army, women working, growing your own food and saving resources. There were 2 posters produced to encourage canal workers. These were displayed at locks, toll offices and port depots.



Challenge

Why not design your own poster to get people to explore the waterway today?



Do you think these posters are successful in their messages to canal workers?



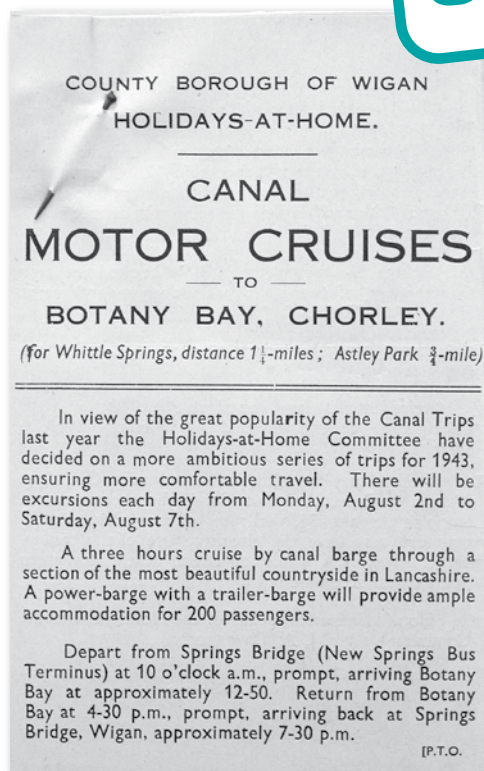
Stay at home holidays

A 'Holidays at Home' committee was set up during the war. Some boat companies were reluctant to provide boats for the scheme as they felt it was more important the boats and fuel were used to transport goods rather than for days out. However others believed the trips were an essential boost for morale.

Canal cruises were so popular in 1942 that it was decided to increase the number of barge trips out to Botany Bay in Lancashire in 1943. The barges sat up to 200 passengers.

P.S – You will notice that the journey has been shortened somewhat – this is to bring the trips to under 3 hours certain, since there are, of course no toilet facilities, and 3 hours is long enough!

(British Waterways Records Office Leeds, a letter from the County Borough of Wigan Holidays-At-Home Committee)



British Waterways Record Office Leeds

Unfortunately many of the **trips stopped** in 1946, despite their popularity, due to the 1894 Merchant Shipping Act which said that **only 12 passengers** could be carried on a boat without a special permit. I wonder why they only just noticed this after **several years** of successful trips!

Challenge

Could you design a poster to advertise boat trips?



Can you find these places on a map?

Strange but True



From D-Day to Holiday

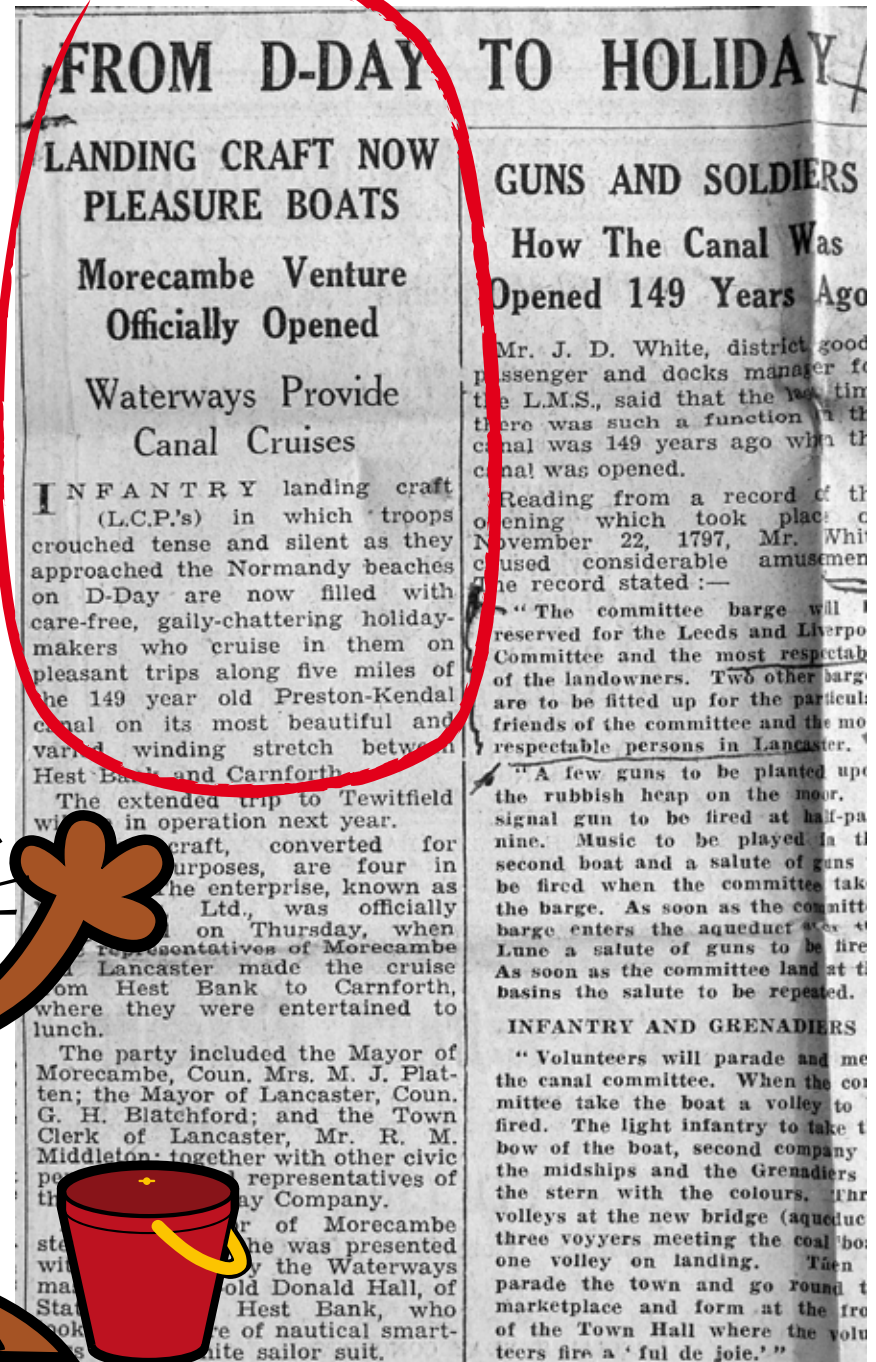
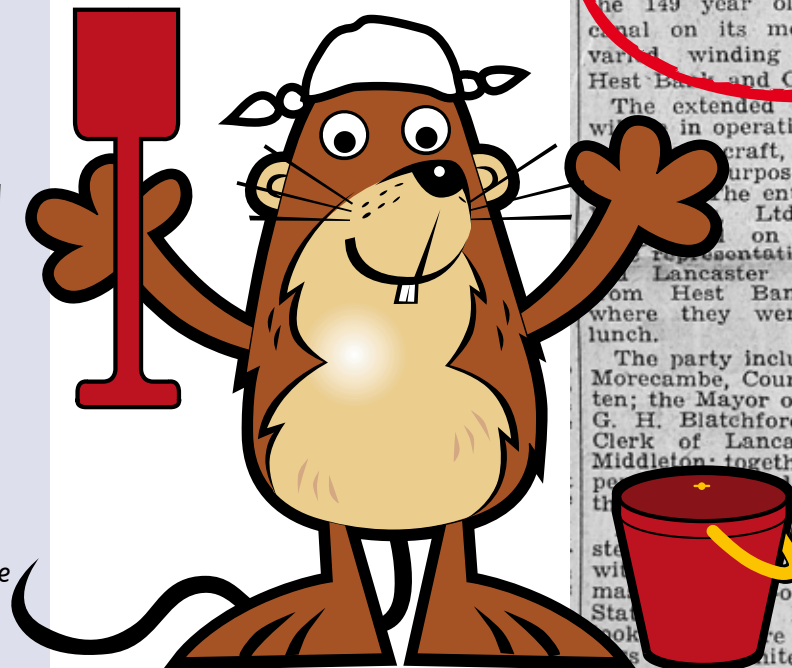
Landing Craft Now Pleasure Boats
Morecambe Venture Officially Opened
Waterways Provide Canal Cruises

Infantry Landing Craft (L.C.P.'s) in which troops crouched tense and silent as they approached the Normandy beaches on D-Day are now filled with care-free, gaily-chattering holiday makers who cruise in them on a pleasant trip along 5 miles of the 149 year old Preston- Kendal Canal on its most beautiful and varied winding stretch between Hest Bank and Carnforth.

The Morecambe and Heysham Visitor and the Lancaster Advertiser, Aug 21st, 1946

**Strange
but True**

Over **1000** people travelled on the **D-Day boats** in the first 2 weeks.



Training Scheme

As canal companies were short of boat crews, a government scheme was proposed to train men to work on the boats. The canals agreed to the idea as it would give them extra staff, but were worried that the inexperienced men would slow down the other boats and could cause damage to the canal. This would cost them money and although they were desperate for staff they could not afford to lose money.

The government agreed to pay a fee to the canal companies to compensate for them for slowing the traffic and any damage that might be caused by the trainees. Although so it did not cost the canal companies too much, the boats the men were training on still had to be carrying and delivering cargo.

Men came over from Ireland to join the training scheme in the North West of England – although not all stayed as their wages were lower than they thought and they could get a lot more money working in factories.

Although the plan had originally been to train men, women got involved too.



The Waterways Archive

Dear Mr. Bird,

Training of women for Canal Boat Crews.

With reference to your letter of 5th June, in which you ask for details of the scheme operating on the Grand Union Canal for training women in the movement of inland craft, I do not think I can do better than enclose an extract from a report received from Mr. Moll which gives the broad outline of his Company's training scheme.

I understand that Mrs. Traill and Miss Gayford are now engaged in training duties, and that it is expected that by the end of the summer crews for six boats will have been trained.

I also attach a note of the G U. Co's Training Scheme for men.

Yours faithfully,

Women had been working on the waterways with their husbands and fathers for a long time before the war.

The Waterways Archive

Women at war

In 1941 all women between 18½ and 45 had to register to say how they could help with the war. They had an interview to see where their skills could be best used; the women were then divided up into those that could be sent anywhere and those who needed to stay at home with children.

By the time the waterways were involved in 1942, most women of any age were already committed to some other form of war work and volunteers needed to leave their current job before they could start working on the canal.

We don't know who this boatwoman is. It is very difficult to identify people in old pictures.



Top Tip

Why not write on the back of your pictures the names of the people in it to help people in the future who might be looking at them?

Sonia Rolt was working in an aircraft factory and it took several weeks before she was released to join her friends on the boats. Emma Smith needed a Doctor's report to get her out of her Secretarial role with M16.

Daphne March traded on her family boat, the Heather Bell, from 1937 on the Worcester & Birmingham Canal. She advertised for crew in the newspaper:

“Woman Owner-Skipper. Oxford graduate. Wants help to run motor barge in canal, river and estuary with general cargo. Work of national importance. Write box 52837.”

The Times, 15th January 1941

The Waterways Archive



The women had to do all the jobs that men on boats did. It surprised some people that they were able to do it.

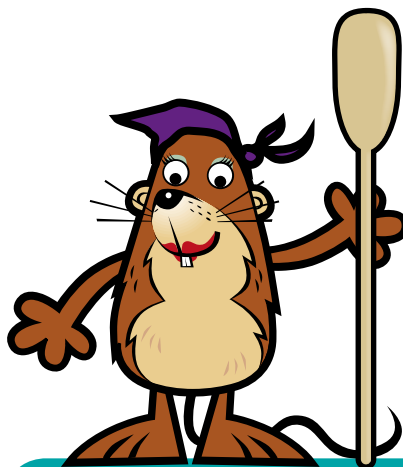
Daphne's first recruit was Molly Traill, who was married to an Air Vice Marshall and had sailing experience. Molly then recruited Eily (Kit) Gayford. Molly had an idea for a larger training scheme and indeed more women were later trained on the Grand Union Canal. Later in the war the Heather Bell was directed by the Ministry of War Transport to work on the Grand Union Canal. Daphne advised the Ministry of War Transport on their training scheme.

Women on boats

Some women enjoyed working on the boats so much that they wanted to stay working on them after the war.

Judies

The Grand Union was not the only place where women worked on the waterways. A similar scheme was set up on the Leeds & Liverpool Canal where the women were nick named 'Judies'. This scheme did not start until 1944, a lot later in the war than the scheme on the Grand Union.



Kit Gayford had her **bike stolen** from outside the bike repair shop by an escaped **prisoner of war**.

**Strange
but True**



It was very hard work putting a boat through lots of locks. Could you do it?

Many women who were sent to work on the scheme did not stay as it was really hard work.

EXTRACT FROM REPORT DATED 14th APRIL, 1942.

Mrs. Traill and Miss Gayford form the basis of the Scheme as they are experienced boatwomen. As an initial step they took a trip with one of our regular steerers on a pair of boats, but this trip, owing to ice, took six weeks to complete. Last week they started off on a short trip by themselves with two trainees, and have just got back to Bulls Bridge. As soon as Mrs. Traill and Miss Gayford become fully experienced, it is our intention to split them up and give them each a pair of boats with three or four trainees, and in this way progress should be made.

As regards payment as soon as Mrs. Traill and Miss Gayford take over training themselves we propose to pay them £5. 10. 0d per week each. Trainees will be paid 35/- each per week, out of which they will have to find their food.

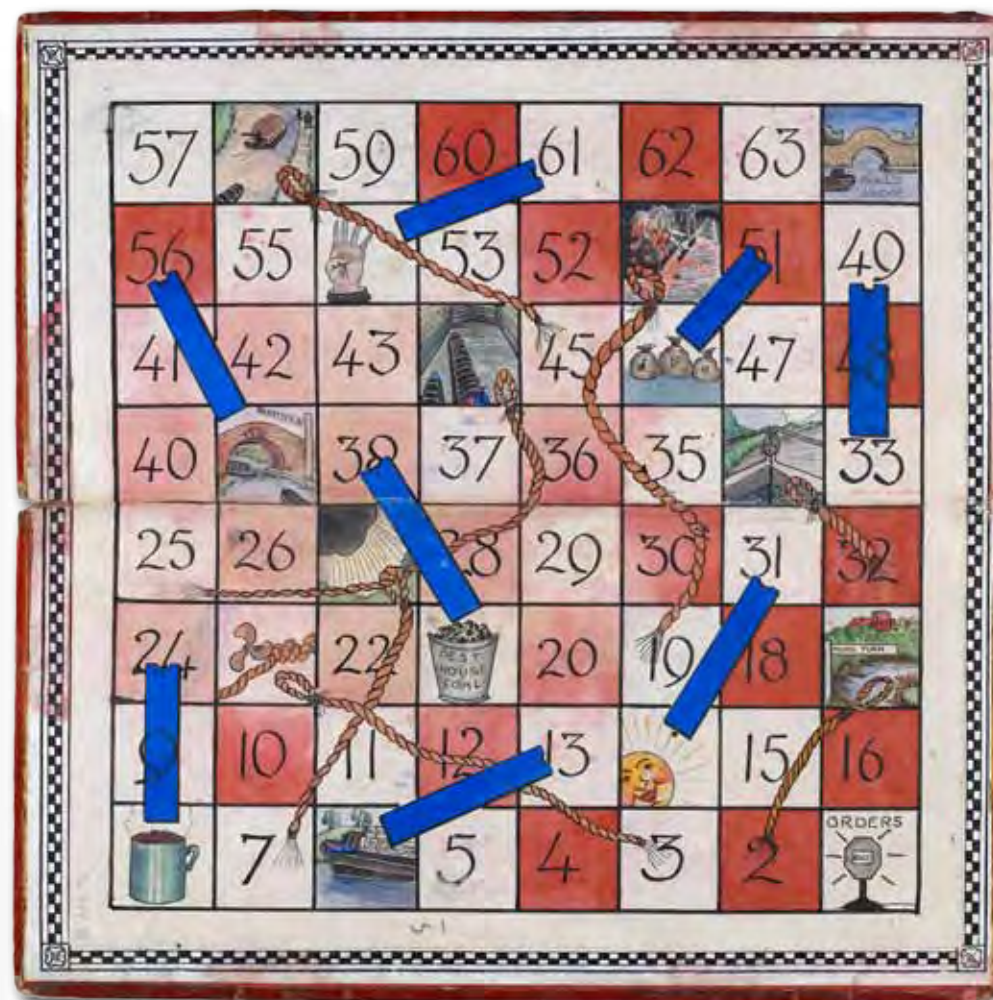
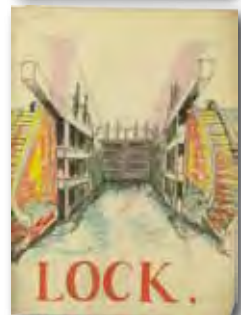
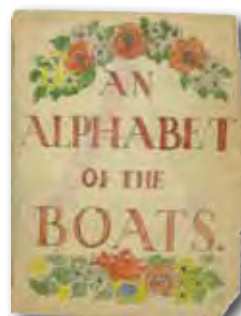


Learning aboard

While the trainee boat women were working on the boats they began to get to know the other boaters. They discovered that it was very hard for boat children to go to school as they were always on the move. Some of the children couldn't read so the trainee boat women came up with their own way of helping. An alphabet book was drawn to teach the children their letters. Almost all the words have some relationship to the canal so the children would know what they were.

Challenge

Why not create your own version of 'Top Planks and Snubbers'? You could use all the things you might see on the canal today.



To teach the children their numbers, a waterways version of snakes and ladders was created 'Top Planks and Snubbers'.

Badges and medals

During WW2 people were given a badge to wear to show they were doing essential war work and who they were working for – this was to avoid the problems of WW1 where men got bullied if they hadn't gone abroad to fight.

Strange but True

The women and men on the canal **wore badges** with IW on them, which stood for '**Inland Waterways**'. Susan Woolfitt wrote a book about the women boaters called '**Idle Women**' joking that is what the IW stood for. They were far from idle; sometimes they worked **20 hour days**.

Medals

Medals were awarded to those who did particular jobs in the war. In WW1 the medals were only given out to people in the army or navy but in WW2 other positions were recognised. Jobs working for the Home Guard were equally dangerous or important such as Fire Guard, ARP Wardens and first aiders. These positions were all awarded the King's Badge.

The Land Girls (women who worked on farms helping to grow food) also got awarded medals but the IW women are still waiting! Kit Gayford did receive an MBE (Member of the British Empire – an award of recognition for serving Britain) in the 1945 New Year Honours List for her work in the war effort.



Badges displayed at The Canal Museum, Stoke Bruerne



Challenge

Why not make your own Inland Waterway war work badge or a medal?

Post War plans

After the war some canal companies hoped that business would go on improving. Some new canals and improvements were suggested. Even the Ministry of Transport asked for reports to see if improvements could be made.

A post war policy for inland waterways was produced by the Canal Joint Committee in May 1945. The committee wanted to preserve the inland waterways and ensure its survival as a transport network after the war. It wanted the Ministry of Transport to continue contributing to the running costs of the waterways as they had during the war.



Some canals fell into disrepair after the war and had to be restored to make them look like they are today.

“For all canals with locks capable of holding only one narrowboat at a locking, the prospect is bleak and unpromising, and should be faced. They are definitely uneconomical and their financial position unsound.”

(The Waterways Archives,
The Pick Report)

Fascinating Facts

The improvements to the **Oxford Canal** would have taken **5-6 years** during which the canal would have to be closed and cost over **£4 million**.

Reading this it is amazing to think that we still have the canals today (although their use is more for pleasure than commercial traffic).

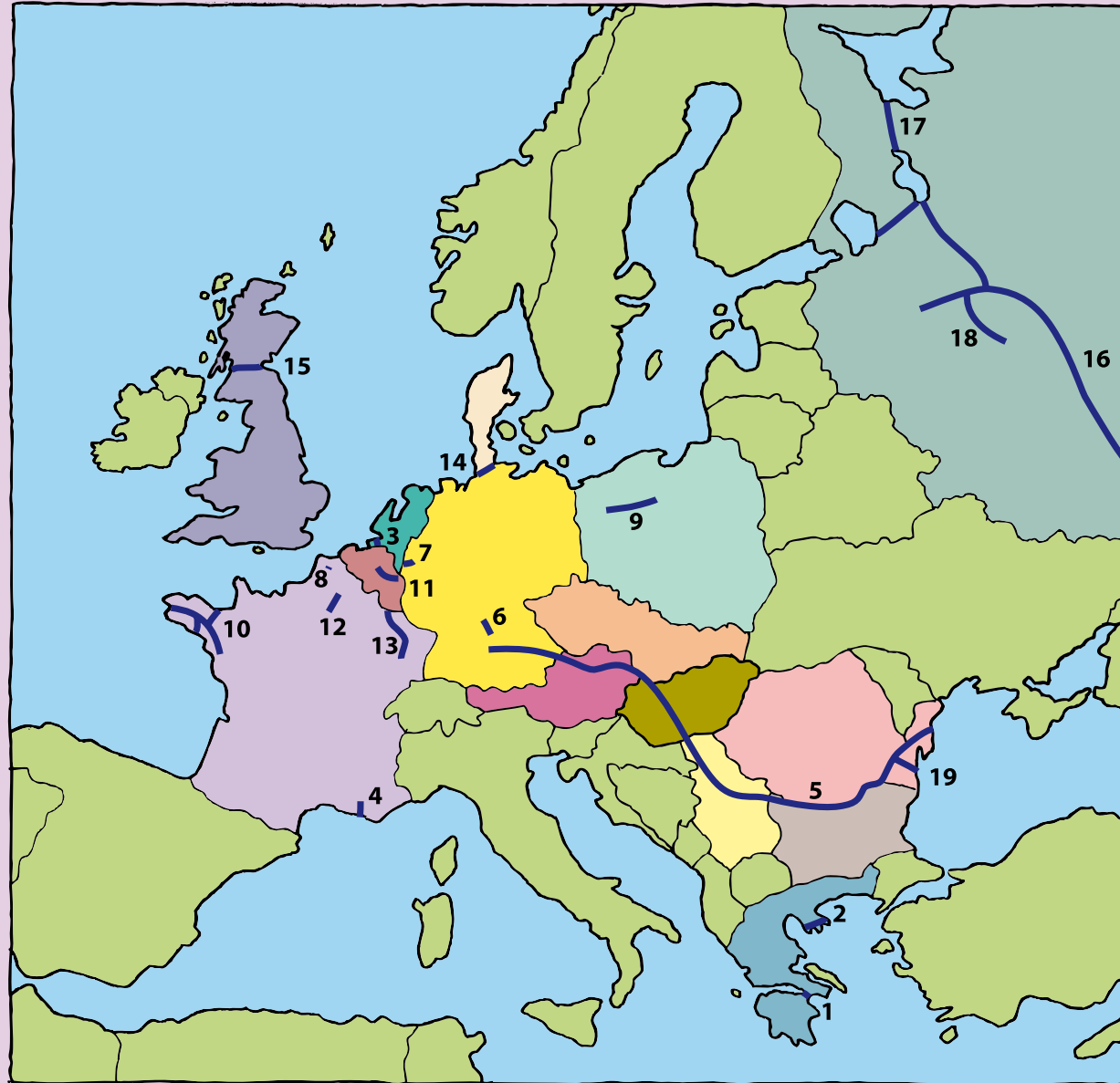
The Pick Report, a report produced for the government about the role of the waterways after WW2 considered improvements to the waterways which would provide jobs for the men returning from fighting abroad. However it also looked at how much it would cost to bring them up to a good standard compared to how much money could be made from them.

Chapter 4

Waterways at war around the world

- 1 Corinth Canal
- 2 Mount Athos peninsula
- 3 Fossa Drusiana
- 4 Fossa Mariana
- 5 Iron Gates and the Danube
- 6 Fossa Carolina
- 7 Fossa Eugenia
- 8 Bergues
- 9 Bromberg (Bydgoszcz) Canal
- 10 Canal de Nantes a Brest
- 11 Noordvaart
- 12 Canal de St Quentin
- 13 Canal de l'Est
- 14 Kiel Canal
- 15 Scottish ship Canal (not built)
- 16 Volga
- 17 Baltic-White Sea Canal
- 18 Moscow Canal
- 19 Constanta Canal

Canals and war have a long association in other parts of the world too. In fact some canals were built especially for helping in war times.



Use the map to help you find the canals that are on the next few pages.

- Greece
- Netherlands
- Belgium
- France
- Serbia
- Bulgaria
- Romania
- Hungary
- Czechoslovakia
- Austria
- Germany
- Denmark
- Poland
- Russia
- UK

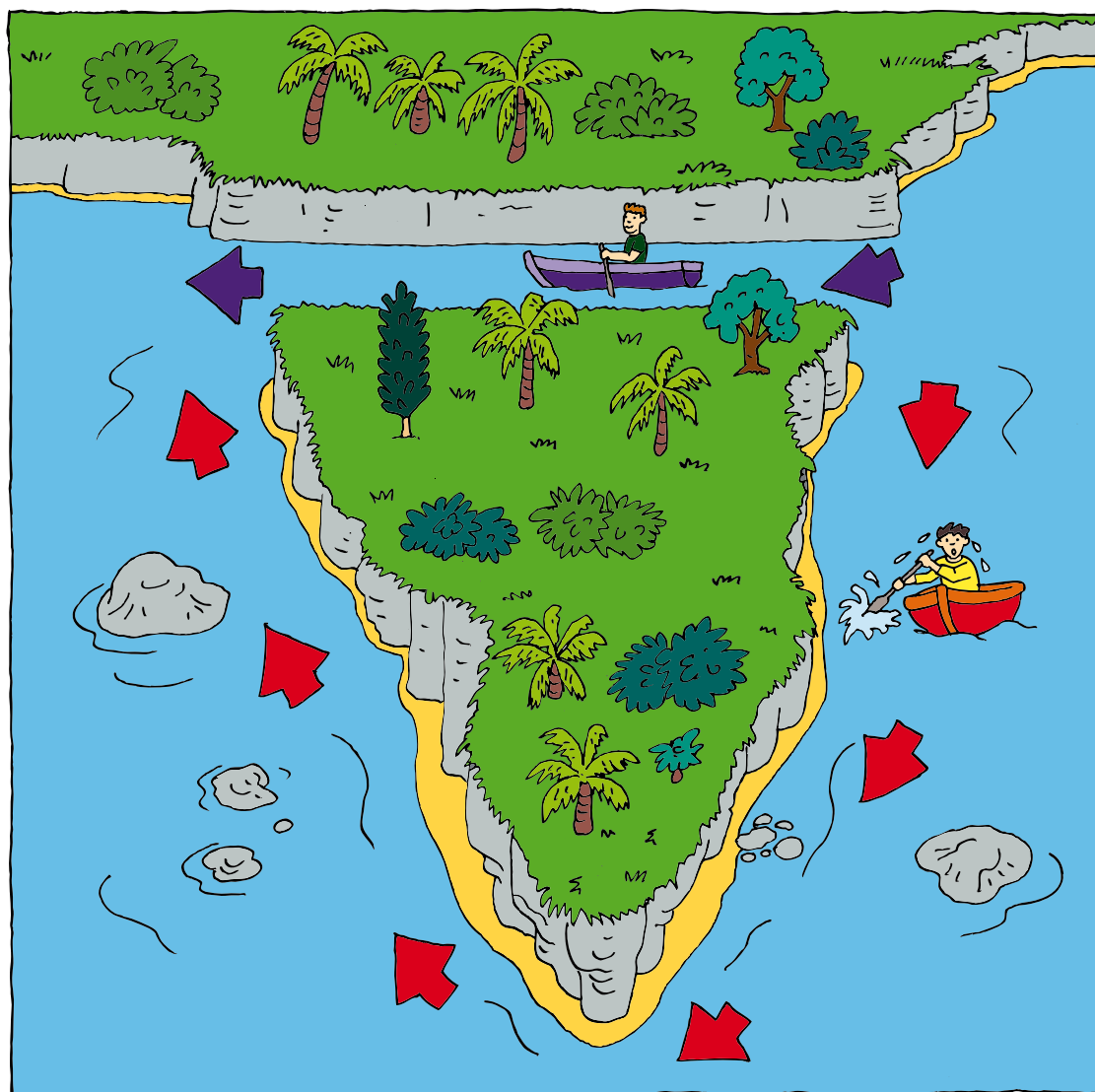
Early military canal history

It's hard to believe but boats were first moved across land for military purposes over 2,500 years ago (600BC) in Ancient Greece.

The boats weren't moving on water though! The Diolkos was a stone track that crossed a peninsula (a sticky out bit of land called the Corinth Isthmus) so that they didn't have to take the boats all the way around the outside of the land, which was a dangerous sea voyage. Instead they were put on wagons and dragged the 4 miles between the 2 coasts.

Fascinating Facts

Augustus, a Roman emperor, used the Diolkos track way to transport all **250 of his boats** across the peninsula after a battle. He defeated the **Egyptian** navy in the battle.



It is much easier to cut across the land, rather than go all the way around the edge. At first they did this using stone tracks, then canals.

More about early canals

The earliest recorded sea-to-sea canal was built by Xerxes, King of Persia, in 480BC. It was 2½ miles long and like the track way in Corinth meant that boats didn't have to go all the way around Mount Athos Peninsula, which would have been a 30 mile journey. Parts of the canal can still be seen today, 2,500 years later.

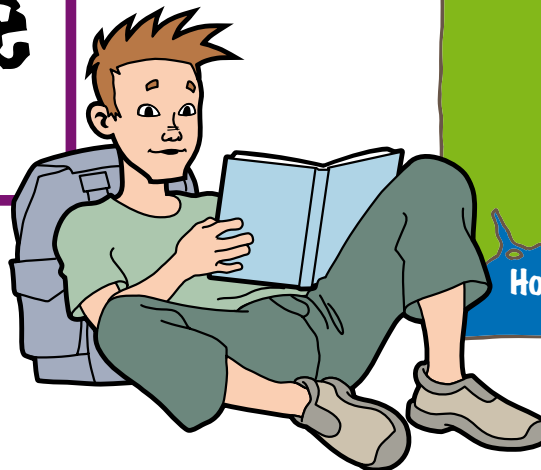
Moving across the world from Greece to China, the Han Canal (now part of China's Grand Canal) was built in 486BC by Fuchai, King of Wu. It ran for 114 miles from a fortified town near Yangzhou to the Huai River. It passed through lots of towns which were run by local warlords, so King Funchai used the canal to transport his troops when attacking the warlords.

Fascinating Facts

The **Romans** are known for having very **good technology**, including inland waterways. They built **new canals** and repaired existing ones so they could move around more easily and **take over** land.

In 67AD **Emperor Nero** attempted to build a canal across a **peninsula**. He died before it could be completed. There is now a **modern canal** on the same route as he planned.

Strange but True



This map shows the modern Grand Canal in China.

Before Canal Mania

Canals were being built and used for military purposes before the great rush to build canals for cargo in Britain.

Charlemagne, King of the Franks, built Fossa Carolina in 743AD linking the River Rhine with the River Main Danube in what is now Germany. At the summit (the highest point on the canal) the boats had to be pulled across short muddy tracks which must have been slow and hard work (locks hadn't been invented yet). The canal was probably used by Charlemagne to move his army when he attacked Mainz.

Fossa Eugenia canal today.



In the early 1600s the Spanish and the Dutch were at war. The Fossa Eugenia (a canal) was being built to link the Rhine and what is now Belgium to improve trade routes. However the borders of the countries changed and it wasn't so useful any more so they didn't bother to finish building the Fossa Eugenia.

In the 16th century much better defences were built across Europe, often using water. A French engineer soldier, Marshall Vauban, built lots of forts which included canals particularly in northern France. One of these was the town of Bergues, near Dunkirk, where you can still see where the canal was part of the defensive structure.

A boat used on the Fossa Carolina.



The Bromberg Canal, 1774, was built by Frederick the Great of Prussia after Poland was split up between other countries. The canal was used to transport troops into the area to make sure no one else took the land and to improve business in the area.



Bergues - Why do you think it might be good to have a canal round the edge of your town?

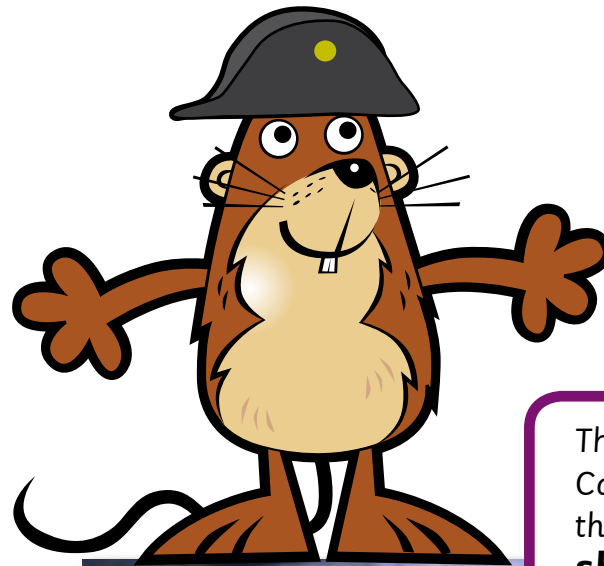


Nineteenth century European wars

During the Napoleonic Wars several canals were built in France including the Canal de Nantes at Brest and the Canal d'Ille et Rance. They allowed supplies, such as food and weapons, to get to the French naval fleet even though Britain was blocking the Channel. Canals were also built to send supplies to France's northern borders and into the new land they had taken over.

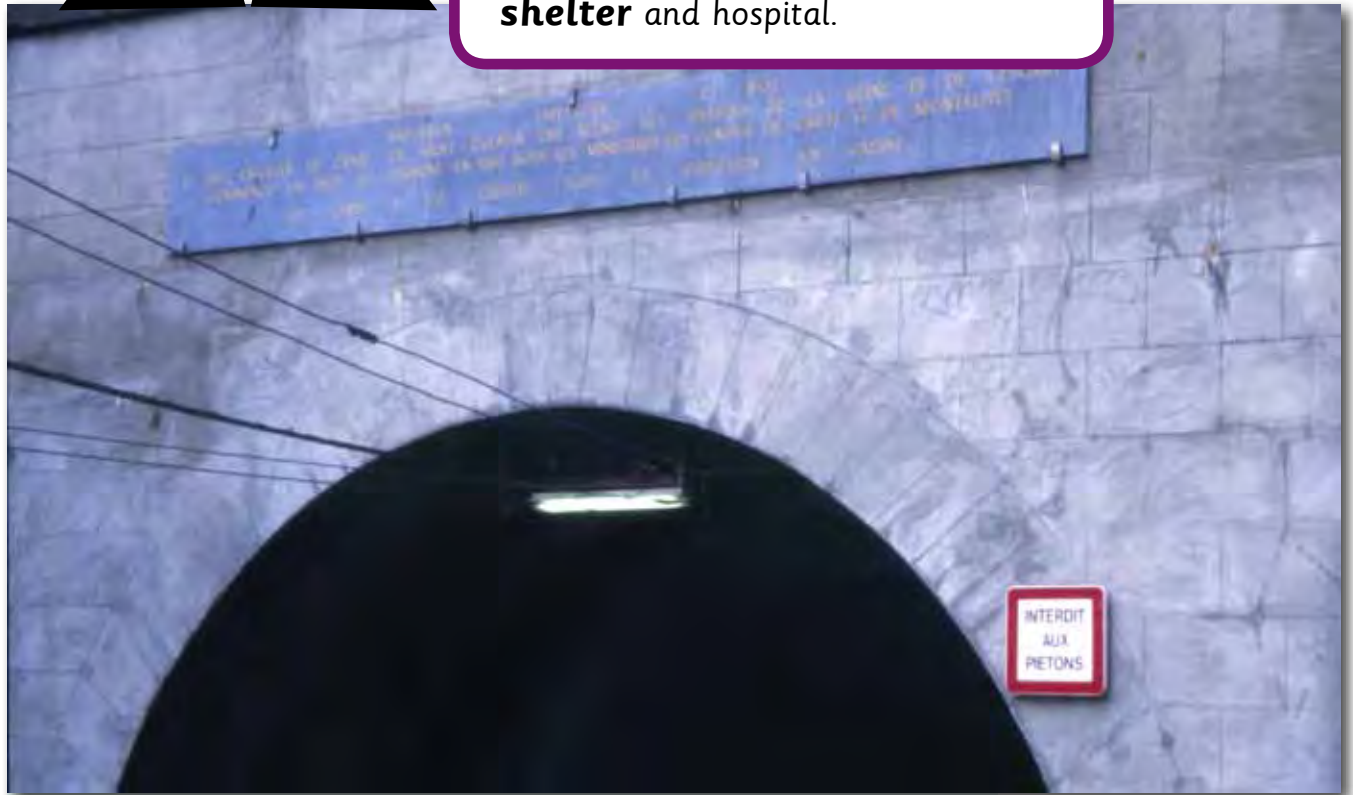
The Canal de l'Est was open later in the 1800s to ensure supplies of coal around Europe and encourage trading between countries.

CLASSIFIED



Fascinating Facts

The **St Quentin tunnel** on the Canal de St Quentin was used in the First World War as a **bomb shelter** and hospital.



A canal to take supplies into Paris called the Canal de Saint Quentin was completed in 1810 with Napoleon agreeing to a 3 mile tunnel.

Photo courtesy of Mike Clarke

Naval Ship Canals

By the end of the nineteenth century, ship canals were built for naval use. In Germany, the Kiel Canal was built so that naval vessels could pass from the North Sea to the Baltic without having to pass Swedish and Norwegian waters. It was enlarged during WW1 to allow Germany's largest warships to pass.



The Kiel still carries boats today with more than 40,000 travelling along it every year.

Photo courtesy of Mike Clarke

www.wow4water.net

Keep it short

Panama Canal

During the Spanish-American War, in 1898, the Americans had to take their battleship Oregon all the way round the bottom of South America to reach Cuba from San Francisco. After the war the Americans decided to shorten the journey by building a canal across the narrow bit of South America. The canal would be able to carry the biggest warships of the day. The Panama Canal was a really important defence for the USA as it would mean warships could travel between the Atlantic and Pacific Oceans.

Scottish Ship Canal

Even Britain thought about canals for warships, with a Scottish Canal being planned in 1927 following the old line of the existing (thinner) Forth & Clyde Canal. It would have allowed ships to travel between the Atlantic Ocean and the North Sea without having to go all the way around the top of Scotland.

Keeping things moving

During WW1, canals in France and Belgium were used by both sides for carrying munitions and other supplies. There were even hospital ships for carrying the wounded. Some English boats, including narrowboats, were also sent to work in Europe to make up for the destruction of local boats.



Russia

Russia has thousands of miles of inland waterways and they even have a naval fleet operating on them. In the past these inland warships were mostly used for attacking waterside towns. In WW1 Russia fought the Germans on the Danube and the warships were then used in the Russian Revolution before playing an important part in WW2, especially on the Volga.

Between the wars, Russia also built the Baltic-White Sea Canal, opened in 1933, which was built for small naval vessels. The canal was built by forced labour (prisoners), and it is unknown how many people died during its construction – probably a lot. Many of the prisoners came from Gulag (a prisoner camp) on Solovki Island. The prisoners that survived building the Baltic-White Sea Canal were sent to build the Moscow Canal where many more died.

The idea of building a canal linking the Black Sea Port with the Danube was first suggested in 1837. It would allow boats to avoid sailing in the shallow Danube Delta. The idea was suggested several more times but building didn't start until 1949 again using prisoners along with the army to build it. Thousands died building the canal; it didn't get completed until 1984 when professional builders were paid to finish the job.



Fascinating Facts

Gulag was the first **prisoner camp** opened in Russia. The island used to be much more peaceful as it was a **monastery**. The monks at the monastery **built canals** all over the island to get around.



Top Tip

If you want to learn more about canals try our other Topic Packs and Fact Files available to download at **www.wow4water.net**